

Voting System Use Procedures for California

Hart Voting System 6.2.1

These procedures have been adopted by the Secretary of State pursuant to Elections Code §19100 and §19205 and shall regulate and govern the use of the Hart Voting System at all elections governed by the California Election Code.

No substitution or modification of the voting system shall be made with respect to any component of the voting system, including these Use Procedures, until the Secretary of State has been notified in writing and has determined that the proposed change or modification does not impair the accuracy and efficiency of the voting system sufficient to require a re-examination and approval.

The Secretary of State reserves the right, with reasonable notice to the vendor and to the jurisdictions using the voting system, to modify the Use Procedures used with the voting system and to impose additional requirements with respect to the use of the system if the Secretary of State determines that such modifications or additions are necessary to enhance the accuracy, reliability or security of any of the voting system. Such modifications or additions shall be deemed to be incorporated herein as if set forth in full.

These procedures constitute a minimum standard of performance. They are not intended to preclude additional steps being taken by individual election officials to enhance the security and reliability of the electoral process. These procedures shall be effective immediately upon approval by the Secretary of State and shall be used in conjunction with all other statutory and regulatory requirements. Insofar as feasible, all procedures prescribed herein shall be carried out in full view of the public.

Where circumstances require it, the Secretary of State may adjust or suspend any of the conditions of recertification for a vendor or a jurisdiction, as the Secretary of State deems prudent and necessary to facilitate successful election administration. Such adjustments or suspensions shall be deemed to be incorporated herein as if set forth in full.

Change History

Version	Date	Description
A	11/11/02	Initial Release
B	02/19/03	Addition of Multilanguage, SERVO System, tabulation and records retention, and recount procedures.
C	12/2/03	Addition of Rally application
D	12/9/03	Added Section 9.4.3 under Operational Security
E	09/9/04	Changes to security to support System 3.4
F	09/20/04	Addition of JBC Tally Report posting requirement
G	07/27/05	Re-structured to meet California Voting System Use Procedure template
H	12/09/05	Updated for System 6 and VBO (Verified Ballot Option)
I	02/19/06	Updated for review comments from Bruce McDannold, State of CA for System 6.1
000255 rev A	05/22/06	Update Title to reflect system 6.2
000255 rev B	06/22/06	SW app. Versions for system 6.2 Section 2.2 paper and printing specifications, printing of Ballot Key on VBO can now be disabled in BOSS 4.3 by the jurisdiction.
000255 rev C	07/31/06	Edits from California Election official Bruce McDannold
000255 rev D	08/06/10	Draft Update for System 6.2.1, to incorporate Audit Log Risk Mitigation requirements

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1 Introduction

The Hart Voting System is a completely integrated suite of products that offers the most streamlined and efficient method for conducting and reporting elections.

The Hart Voting System automates the balloting and tabulation process using a suite of hardware and software products. The eSlate and eScan systems and their components provide central, regional, and precinct tabulation, as well as complete reporting and auditing.

The system is bracketed by the ballot definition and tabulation functions. The Ballot Origination Software System, BOSS, provides the user the means to enter jurisdictional and election specific information. The tabulation function is managed by the Tally software application that accumulates Cast Vote Records (CVRs) from components of the system that interface with the voter. These voter interface components consist of the eSlate DRE voting device, the eScan digital ballot scanner, and paper ballots printed with Ballot Now.

1.1 Terms and Definitions

BOSS	Ballot Origination Software System
CVR	Cast Vote Record. An electronic version of a voted ballot cast in the eSlate, eScan or Ballot Now System. All Cast Vote Records contain the information on how contests were voted. Ballot Now Cast Vote Records also include additional information concerning actions required to resolve undervoted, overvoted, or damaged contests.
DRE	Direct Record Electronic
JBC	Judge's Booth Controller
MBB	Mobile Ballot Box
PCMCIA	Personal Computer Memory Card International Association
SERVO	System for Election Records and Verification of Operations
VBO	Verifiable Ballot Option
RBP	Recommended Best Practice. A procedure or set of procedures not required by statute or other California authority but recommended by Hart InterCivic to enhance security.
HSO	Hart System Online is a web-based customer support tool for customers to submit equipment repair information and change or enhancement requests.
Chain of Custody	A written record that documents the identification and status of equipment, material, data, information, etc., and the persons(s) to whom the security and control of the specified item(s) has been entrusted.
Precinct Board	The persons appointed to serve as election officers for each precinct at any election.

1.2 Hart Voting System

The Hart Voting System has these major components:

- Hart Election Management System software applications
- eSlate System devices
- eScan System devices

1.2.1 Hart Election Management System

- Ballot Origination Software System™ (BOSS) Ver. 4.3.13

The software application used for the purpose of creating a central election database in which ballot styles are defined and from which data media, Mobile Ballot Box (MBB) and Audio PCMCIA cards, are created for use in voting devices and for printing paper ballots.

- Ballot Now™ Ver. 3.3.11

The paper ballot management software application for printing prints paper ballots on demand and/or creating ballot files for third-party printing. Voted ballots are digitally scanned and processed by Ballot Now or an eScan to extract the cast vote records (CVRs) for delivery to the Tally application. (Not required for DRE.)

- Tally™ System (Tally) Ver. 4.3.10

The software application used for the purpose of processing MBBs to accumulate and tabulate CVRs and report election results.

- SERVO™ Ver. 4.2.10

The System for Election Records and Verification of Operations software application used for secure voting device CVR and audit log backup for each election. SERVO is also used to reset voting devices prior to use in a new election. (Note: This document will be updated with additional instructions regarding the use of SERVO when new procedures have been approved by the Secretary of State.)

- Rally™ Ver. 2.3.7

The software application used for the purpose of processing MBBs by reading, storing, and transferring CVRs via closed direct connection network to a PC running the Tally application. Rally does not have tabulation capabilities. All Tally results that include data transferred from Rally stations are unofficial until verified by appropriate auditing procedures.

- eCM Manager Ver. 1.1.7

The software application used for the purpose of generating and managing encryption keys (security signing keys) and personal identification names (PINs) for the eSlate Cryptographic Module (eCM token).

1.2.2 eSlate System Devices

- Mobile Ballot Box™ (MBB)

A PCMCIA Card (flash memory card) serving as the storage medium for the ballot definition file created by BOSS to configure voting devices and subsequently store CVRs for delivery to the Tally application.



- Judge's Booth Controller™ (JBC) Ver. 4.3.1

The polling place control console for managing up to 12 eSlate/DAU voting devices. The JBC requires an Election MBB to generate random four-digit Access Codes to regulate voters' ability to view and vote the correct electronic ballot.



- eSlate® Ver. 4.2.13

The secure DRE voting device that, when connected to the JBC, presents the ballot to the voting public, and records their selections.



- Disabled Access Unit™ (DAU) eSlate Ver. 4.2.13

The DRE voting device consisting of an eSlate fitted with additional hardware capable of accepting input from any standard binary input medical device, including tactile input (jelly) switches or a sip-and-puff device, of reading an Audio card, and of playing audio files through headphones.



VBO (Verifiable Ballot Option) Ver. 1.8.3

The printer connected to the eSlate/DAU that provides a secure, voter verifiable paper audit trail (VVPAT). The printer is located inside the voting booth and prints a paper record of every ballot cast through the eSlate voting unit.



1.2.3 eScan System Devices

- Mobile Ballot Box™ (MBB)

A PCMCIA Card (flash memory card) serving as the storage medium for the ballot definition file created by BOSS to configure to voting devices and subsequently store CVRs for delivery to the Tally application.



- eScan Ver. 1.3.14

A self-contained voting terminal with a single-feed dual-sided scanner that transports, scans, decodes, and tabulates results from hand-fed election paper ballots, created and printed by the Ballot Now software application, and stores CVRs on an MBB.



2 Ballot Definition

2.1 Overview

Ballot layout for both eSlate and paper ballots is accomplished in BOSS during the election definition process.

- Paper ballots are generated for printing through the Ballot Now application using an election-specific MBB. The option to print ballot serial numbers on paper ballots is turned off in Ballot Now prior to printing any ballots.
- Paper ballots may be printed directly from Ballot Now or saved to files for printing by a California certified third-party printer. PostScript print drivers are set to download all soft fonts. Files provided to a third-party printer are in PostScript file format.
- Ballot stock used for paper ballots must meet the specifications described in Section 2.2.

Note: Jurisdictions using Ballot Now to generate and print ballots in an election must be certified by the Secretary of State as ballot finishers under § 20220 of Title 2, Division 7 of the California Administrative Code.

2.1.1 Cooperation in Certification Testing

Hart will maintain its certification as a qualified California ballot printer and finisher. However, Hart does not require exclusivity in ballot printing and will continue to cooperate fully in certification testing of ballots produced by other ballot printers. For printing information contact Print Services (800.223.HART).

2.2 Paper and Printing Specifications

2.2.1 Paper Ballots

Paper ballot dimensions are set in BOSS.

Paper stock for printed ballots is specified in California Election Code §13002, which describes tints and watermarks required for each election.

Paper ballot stock may only be purchased from a CA certified ballot finisher or manufacturer, after issuance of a release by the Secretary of State.

Consider paper weight and postage when selecting paper ballot dimensions. Hart secure watermarked paper with the lower left corner cut 3/8", 70 lb. offset is recommended. If the ballots have stubs on the

bottom, the same paper with the upper left corner cut 3/8" is recommended. Confirm envelope size is compatible with ballot paper size to minimize the number of fold lines.

Printing specifications for printing ballots from Ballot Now are described in the following Hart InterCivic documents:

- *Ballot Now Ballot Printing Specification 6000-261 Rev. B*
- *Digital Ballot Printing Specification 6000-297 Rev. B*

2.2.2 Paper for the VBO

The VBO requires a roll of archival quality thermal paper, and in order for its end-of-roll sensor to function, the paper must include three low reflectance black stripes across an uncoated width of paper at 16 feet from the end of the roll.

Environmental storage requirements for this thermal paper are:

- Relative humidity: 45% – 65%
- Temperature: 40 to 77 °F (5 to 25 °C)
- In absence of:
 - Extended exposure to office lighting and/or and direct sun light
 - Exposure to water, other fluids, or fumes

2.2.2.1 Thin Paper

- Width: 4.37 inches
- Core inside diameter: 0.45 inches
- Length: 305 feet
- Thickness: 2.0 mil
- Shelf life: 20 years

2.2.2.2 Thick Paper

- Width: 4.37 inches
- Core inside diameter: 0.45 inches
- Length: 250 feet
- Thickness: 2.4 mil
- Shelf life: 10 years

2.3 Layout Requirements and Specifications

Layouts for the Hart System 6.2.1 ballots, including physical ballot sheet size for paper ballots, are defined in BOSS by selecting one or more templates before the data file prior to generating the MBB. Templates contain the language and number of columns for electronic and paper ballots, and the paper size for paper ballots.

2.3.1 eSlate Layout

The Large Print eSlate templates (which include high-contrast graphics and large fonts) may be enabled for jurisdictions using the eSlate voting devices. When BOSS generates layouts for the eSlates, all ballot styles are created for each eSlate template selected.

2.3.2 Paper Ballot Layout

Paper size dimensions and number of desired columns for the paper ballot layout are chosen within BOSS Paper Ballot Template options. When BOSS generates paper ballots, a Ballot Now polling place is created to which all ballot styles are automatically assigned. Stubs, if chosen for paper ballots, can be configured through the Ballot Now application.

2.3.3 VBO Print Layout

The option to “print Ballot Key” must be deselected from the BOSS eSlate options window. BOSS automatically configures the remaining VBO print layout.

3 System Installation and Configuration

All components of the Hart Voting System shall reside in a secure, locked area with access restricted to authorized personnel.

BOSS, Tally, Ballot Now, Rally and SERVO must be installed on physically separate computers.

3.1 Hardware Requirements and Specifications

The minimum hardware standards listed below are those required to operate the respective HVS application/component in accordance with the use procedures prescribed in this document.

The recommended hardware standards describe upgrades recommended by Hart to achieve more efficient use of the respective HVS application/component.

Unless otherwise noted, the term “memory card” refers to the 128 MB ATA PCMCIA card used in the HVS as a Mobile Ballot Box or an Audio Card.

(Note: Items marked with an asterisk (*) in this section must be procured through Hart InterCivic to insure component compatibility and system operation.)

3.1.1 Ballot Origination Software System (BOSS) Hardware Requirements

BOSS runs on Windows 2000 Professional, Service Pack 4.

- Minimum hardware standards
 - 1 GHz Pentium 4 System Processor
 - 512 MB of RAM
 - 40 GB Hard Drive
 - CD-RW drive
 - 1 USB 2 Port (add USB 2 ports if using USB Mouse or Keyboard)
 - Parallel interface or additional USB 2 Port (for report printer)
 - Monitor screen resolution set to 1024 x 768 or higher and 16-bit color
- Recommended hardware standards
 - 2 GHz Pentium 4 System Processor
 - 1G of RAM
 - 40 GB Hard Drive
 - CD-RW Drive
 - 2 USB 2 Ports (add USB 2 ports if using USB Mouse or Keyboard)
 - Parallel Interface or additional USB 2 Port (for report printer)
 - Monitor with screen resolution of 1280X1024 and 16-bit color
- In addition to the PC upon which the BOSS application runs, the following peripheral items are also required:
 - 1 ATA Memory Card Reader/Writer*
 - 1 Spyrus USB 2 Security Key*
 - 1 Report Printer (with Win 2000 drivers)
 - 1 Printer Cable
 - 1 Headphones with Microphone for recording audio

3.1.2 Tally Hardware Requirements

Tally runs on Windows 2000 Professional, Service Pack 4.

- Minimum hardware standards
 - 1 GHz Pentium 4 system processor
 - 512 MB RAM
 - 40 GB Hard Drive
 - CD-RW Drive
 - 1 USB 2 Port (add USB 2 ports if using USB Mouse or Keyboard)
 - Parallel Interface or additional USB 2 Port (for report printer)
 - Monitor with screen resolution of 1024 x 768 or higher and 16-bit color
 - Network Interface Card (for use with Rally at Central Count Station)
- Recommended hardware standards
 - 2 GHz Pentium 4 System Processor
 - 1 GB RAM
 - 40 GB Hard Drive
 - CD-RW Drive
 - 2 USB 2 Ports (add USB 2 ports if using USB Mouse or Keyboard)
 - Parallel Interface or additional USB 2 Port (for report printer)
 - Monitor with screen resolution of 1280 X 1024 and 16-bit color
 - Network Interface Card (for use with Rally at Central Count Station)
- In addition to the PC upon which the Tally application runs, the following peripheral items are also required:
 - 1 ATA Memory Card Reader/Writer*
 - 1 Spyrus USB 2 Security Key*
 - 1 Report Printer (with Win 2000 drivers)
 - 1 Printer Cable

3.1.3 Rally Hardware Requirements

Rally runs on Windows 2000 Professional, Service Pack 4.

- The minimum standards for a PC to run the Rally application are as follows:
 - 733 MHz processor
 - 512 MB RAM
 - 20 GB Hard Drive
 - CD-RW Drive
 - 2 USB 2 Ports (add USB 2 ports if using USB Mouse or Keyboard)
 - Parallel Interface (if needed for report printer)
 - Network Interface Card (and RJ-45 connection for use with Tally at Central Count Station)
 - Display with 1024 X 768 resolution and 16-bit color
- Recommended hardware standards for Rally are the same as the minimum standards. In addition to the PC upon which the Rally application runs, the following peripheral items are also required:
 - 1 ATA Memory Card Reader/Writer*
 - 1 Spyrus USB 2 Security Key*

3.1.4 SERVO Hardware Requirements

SERVO runs on Windows 2000 Professional, Service Pack 4.

- Minimum hardware requirements
 - 1 GHz Pentium 4 System Processor
 - 512 MB RAM
 - 20 GB Hard Drive
 - CD-RW Drive
 - 2 USB 2 Ports (add USB 2 ports if using USB Mouse or Keyboard)
 - Parallel Interface with Enhanced Parallel Port (EPP) capability (or PCMCIA Card Interface and Quatech Card*)
 - Network Interface Card (and RJ-45 connection for interface with the eScan)

- Display with 1024 x 768 resolution and 16-bit color
- Recommended hardware standards for SERVO are the same as the minimum standards.
- In addition to the PC upon which the SERVO application runs, the following peripheral items are also required:
 - 1 ATA Memory Card Reader/Writer*
 - 1 Spyrus USB 2 Security Key*
 - 1 Network Cable

3.1.5 Ballot Now Hardware Requirements

Ballot Now (BN) runs on Windows 2000 Professional, Service Pack 4.

The application can be used in three different modes: Standalone, Server, and Client.

- Minimum hardware standards (Standalone or Server mode)
 - 2.2 GHz Pentium 4 system processor
 - 1 GB RAM
 - 30 GB hard drive
 - CD-RW Drive
 - 2 USB 2 Ports (add USB 2 ports if using USB Mouse or Keyboard)
 - Parallel Interface
 - SCSI or Firewire Interface (as required for scanner)
 - Network Interface Card (for connectivity with Client in Server mode))
 - Monitor with screen resolution of 1024 x 768 or higher and 16-bit color
- Recommended hardware standards (Standalone or Server mode)
 - 2.8 GHz Pentium 4 System Processor
 - 1 GB RAM
 - 80 GB Hard Drive
 - DVD-RW Drive
 - 2 USB 2 Ports (add USB 2 ports if using USB Mouse or Keyboard)
 - Parallel Interface
 - SCSI or Firewire Interface (as required for scanner)
 - Network Interface Card (for connectivity with Client in Server mode)
 - Monitor with screen resolution of 1024 x 768 or higher and 16-bit color
- In addition to the PC upon which the Ballot Now application runs, the following peripheral items are also required:
 - 1 ATA Memory Card Reader/Writer*
 - 1 Spyrus USB 2 Security Key*
 - 1 Duplex Scanner (see list of certified scanners below)
 - 1 Scanner Cable
 - 1 Duplex Ballot/Report Printer (with Win 2000 drivers)
 - 1 Printer Cable
- Minimum hardware standards (Client mode)
 - 2.2 GHz Pentium 4 System Processor
 - 256 MB RAM
 - 30 GB Hard Drive
 - CD-ROM Drive
 - 2 USB 2 Ports (add USB 2 ports if using USB Mouse or Keyboard)
 - Parallel Interface
 - SCSI or Firewire Interface (as required for scanner if used for Client resolution)
 - Network Interface Card (for connectivity with Server)
 - Monitor with screen resolution of 1024 x 768 or higher and 16-bit color
- Recommended hardware standards (Client mode)
 - 2.2 GHz Pentium 4 System Processor
 - 512 MB RAM
 - 30 GB Hard Drive

- CD-RW Drive
- 2 USB 2 Ports (add USB 2 ports if using USB Mouse or Keyboard)
- Parallel Interface
- SCSI or Firewire Interface (as required for scanner if used for Client resolution)
- Network Interface Card (for connectivity with Server)
- Monitor with screen resolution of 1024 x 768 or higher and 16-bit color

If a Ballot Now Client is to be used for Client resolution, the following peripheral items are also required:

- 1 Spyrus USB 2 Security Key*
- 1 Duplex Scanner (see list of certified scanners below)
- 1 Scanner Cable
- Commercial, off-the-shelf (COTS) duplex scanners certified for use with HVS System 6.2.1 are as follows:
 - Kodak: 1500D, 3520D, i260, i610, i620, i640, i660, i830
 - Fujitsu: M4097D, M4099D

3.1.6 eCM Manager Hardware Requirements

eCM Manager runs on Windows 2000 Professional, Service Pack 4.

- Recommended hardware standards for eCM Manager are the same as the minimum standards.
 - 1 GHz Pentium 4 System Processor
 - 512 MB of RAM
 - 40 GB Hard Drive
 - 1 USB 2 Port
 - Monitor screen resolution set to 1024 x 768 or higher and 16-bit color

3.1.7 Additional System Hardware

In addition to the hardware requirements listed with each HVS software application above, the following items may also be used with components of the HVS:

- Uninterrupted power supplies (UPS) may be used to continue operation of the devices long enough to terminate the current operation and accomplish a normal computer shutdown should there be an interruption in AC power to the device.
- COTS USB hubs may be used to connect multiple ATA Card Read/Write devices to BOSS to facilitate more expeditious writing of MBBs and/or Audio Cards.
- COTS USB hubs may be used to connect multiple ATA Card Read/Write devices to Tally and / or Rally to expedite the MBB read process.
- COTS USB hubs may also be used to provide USB interface for multiple authorized devices (e.g. memory card reader/writer, Spyrus USB 2 Security Key, report printer) when the PC only has one USB port.

3.2 Network Configuration

BOSS, Tally, Ballot Now, Rally and SERVO must be installed on physically separate computers. The network interface card (NIC) is disabled in the BIOS of the BOSS, Tally and Ballot Now computers, except as noted below. The NIC remains enabled in Rally and SERVO PCs, because network connection with other components of the HVS is required to accomplish the functions for which these applications were designed.

At no time are any Hart Election Management System Computers to be connected to the Internet.

Wireless or modem transmission or reception is specifically prohibited for use with this system or any device connected by network to a component of this system at any time.

All unnecessary ports and connections must be disabled or physically blocked as described in Section 10.2.1.

To expedite MBB processing in large jurisdictions, Rally stations may be utilized to read CVRs from MBBs and then transfer the data to Tally via secure, closed, direct connection network with the whole system being totally contained in the tabulation room. Communication between Rally stations and the Tally computer is protected by the use of security certificates through Secure Sockets Layer (SSL) protocols.

In large jurisdictions, the main Ballot Now (BN) application can be operated in the Server mode, while additional PCs can be configured with BN to operate in the Client mode while connected to the BN Server via a secure, closed direct connection network. Communication between the BN Server and BN Client computer(s) is protected by security certificates through SSL. Networking the BN Server and Clients together allows the Client PCs to accomplish ballot image processing or function as ballot resolution stations, thereby significantly expediting BN central count operations. If more than one BN Server-Client closed direct connection network is used, each network must be physically separate from all others.

The SERVO application utilizes a closed direct connection network to communicate with the eScan digital ballot scanner and perform separate and distinct functions, including Backup, Reset, Program eCM Key, Verify Device Firmware, and add device to equipment list.

Network configuration is performed only by personnel trained and authorized by Hart InterCivic to ensure that operation and security standards for the network and hardware configuration are met. Computers running networked applications will be physically isolated from any other networks or computers running software that is not part of the certified Hart Election Management System or an approved utility identified in this document.

3.2.1 BIOS Configuration

See the *Tally Computer Setup Procedures for California Users* document for detailed information regarding BIOS configuration.

In addition to the networking of HVS application PCs, the Judge's Booth Controller and eSlate/DAU voting devices are networked in the polling place via a secure, closed direct connect network using a daisy-chain network cable configuration that is totally contained within the polling place.

As in the case of HVS application PCs, all unused ports on HVS polling place equipment should be disabled or physically blocked and the use of wireless or modem connections to any component of the voting system is strictly prohibited, as is any connection to the Internet at any time.

Protection of network security within the polling place calls for maintaining vigilance over voting equipment and voter activity.

3.3 Software Installation and Configuration

Software installation and configuration is performed only by personnel trained and authorized by Hart InterCivic. Each Hart Voting System software application must be installed and configured on physically separate PCs, with the following exception:

- eCM Manager may also reside on the BOSS PC only.

For the State of California, the following options must be set during installation as indicated below:

- BOSS, Ballot Now, Tally, Rally and SERVO must each be installed on physically separate PCs.
- Tally application will be installed with the "secure desktop" feature enabled.
- SERVO application will be installed with the "secure desktop" feature enabled.
- Tally application will be installed with the retrievable ballot interface disabled.
- Tally application must be installed with the option to allow parsing of provisional ballots, and with the option enabled to allow counting of provisional ballots in the reassigned precinct.

- Tally and Rally applications must have audit log printing options set to write the audit logs to file.

Jurisdictions are prohibited from installing any software applications or utilities on any component of the voting system that have not been identified and approved by Hart and approved by the Secretary of State.

3.3.1 Installation and Configuration of Utilities

See the *Tally Computer Setup Procedures for California Users* document for details on the utilities and software applications necessary for operation of the HVS applications.

3.3.2 User IDs, Passwords, and Permissions

After installation of each Hart Voting System software application, the jurisdiction must create new user accounts for the software application, and then must delete the administrative username created by Hart InterCivic. Each new user account should be assigned the appropriate pre-defined role with sufficient permissions and appropriate restrictions so that user can perform his or her functional duties without compromising password-enforced security of the system.

3.3.2.1 Password Security Best Practices

- Administrator passwords, for either Hart Voting System PCs, or for Hart Voting System software applications, should not be widely distributed.
- Change every user ID, password, certificate, eCM key ID, signing key, and PIN during computer acceptance and for each election.
- The user currently logged in to a computer should stay at the computer while running the application and exit the application or lock the desktop by simultaneously pressing Ctrl+Alt+Del and <Enter> if s/he steps away from the computer.

3.3.2.1.1 Recommended Password, PIN or Certificate Conventions

- ♦ A combination of upper and lowercase letters
- ♦ A password that is at least 6 - 12 characters long
- ♦ A new password for every user for each election
- ♦ Random characters that users will remember
- ♦ Use the first letters of the words in a memorable phrase.
- ♦ Use a meaningless but easy-to-remember phrase.
- ♦ Insert numbers into the phrase.
- ♦ Note the password, certificate information, and/or eCM PIN, and store in a secure location.

3.3.2.1.2 Recommended Password Conventions to Avoid

- ♦ Any password that you have used before
- ♦ Any string of three characters repeated or reversed
- ♦ Any character repeated more than twice
- ♦ Your name or your initials
- ♦ The computer or application user ID
- ♦ The names of relatives, birthdays, phone numbers or the company name
- ♦ The number for this year, last year or next year, or the three-character abbreviations for the months
- ♦ Telephone number or car license plate numbers

3.3.2.2 User Security Roles

When creating usernames and passwords for each software application, all users must have only the minimum required permissions for their role. Jurisdictions will maintain a record of all personnel authorized access to PCs containing HVS applications and/or data. This record will include the operational responsibilities of each person with respect to the specific application and the permissions granted to that person to accomplish those responsibilities. The record will normally be maintained and controlled by the jurisdiction's chief election official, who will ensure the document is stored in a secure location.

3.3.2.2.1 BOSS Permissions

- ♦ BOSS Users may be configured with "Update," "View" or "All" permissions.
- ♦ For additional details on functions associated with various BOSS permission levels, see the *Hart InterCivic Ballot Origination Software System Operations Manual* 6100-019 Rev. 43-62B and *Ballot Origination Software System Training Manual* 6300-002 62A.

3.3.2.2.2 Ballot Now Permissions

- ♦ Ballot Now Users may be configured with "Resolution Board," "Operator," or "Administrator" permissions.
- ♦ For additional details on functions associated with various Ballot Now permission levels, see the *Hart InterCivic Ballot Now Operations Manual* 6100-067 Rev. 33-62B and *Ballot Now Training Manual* 6300-003 62A.

3.3.2.2.3 Tally Permissions

- ♦ Tally Users may be configured with "Operator" or "Administrator" permissions.
- ♦ For additional details on functions associated with various Tally permission levels, see the *Hart InterCivic Tally Operations Manual* 6100-049 Rev. 43-62C and *Tally Training Manual* 6300-005 62A.

3.3.2.2.4 Rally Permissions

- ♦ Rally Operators are typically configured with "MBB processing and transferring" permissions.
- ♦ Rally Administrators are typically configured with all permissions.
- ♦ For additional details on functions associated with various Rally permission levels, see the *Hart InterCivic Rally Operations Manual* 6100-114 Rev. 23-62A and *Tally Training Manual* 6300-005 62A.

3.3.2.2.5 SERVO Permissions

- ♦ SERVO users may be granted any combination of the following permissions: "User Administration"; "Event Administration"; "Equipment Administration"; "Admin Reset"; "Election Recount/Recovery"; and "Reporting."
- ♦ For additional details on functions associated with various SERVO permission levels, see the *Hart InterCivic SERVO Operations Manual* 6100-102 Rev. 42-62B and *Hart Voting System Support Procedures Training Manual* 6300-006 62C.

3.3.2.3 JBC and eScan Passwords

The JBCs and eScans require 6-character passwords for the following functions:

- Start-up
- Open polls

- Close polls
- Administrator functions

The passwords for JBCs and eScans used in the election must be made available to the poll workers in a controlled, secure manner.

Note: The passwords for JBCs are the same for all JBCs used in the election and the passwords for eScans are the same for all eScans used in the election. Therefore, these passwords must be changed for every election.

3.4 Acceptance Testing

The Hart InterCivic document section entitled *Polling Place Equipment Acceptance and Functionality Test Procedures* in the *Hart Voting System Support Procedures Training Manual 6300-006 62C* provides the detailed description of Acceptance Test procedures for the eSlate and eScan Systems.

RBP - Conduct acceptance testing procedures with a minimum of two persons.

3.4.1 eSlate System Acceptance Test

- Check receipt of equipment and supplies
- Unbox equipment and supplies
- Set up and testing voting booths
- Set up and testing JBCs and eSlate voting units
- Use SERVO to:
 - Log the serial numbers of the JBCs and eSlates
 - Write the security signing key to the JBCs
 - Set the clock in the JBCs
 - Verify firmware revisions in the JBCs and eSlates
- Inventory equipment (record serial numbers of booths, eSlates, JBCs, booth caddies)
- Reconfigure booths and JBCs for storage
- Seal the cable-in port on the eSlate Booth with a cover or tamper-evident seal
- Seal the JBC printer port with a cover or tamper-evident seal when not used for connection with SERVO or firmware burn utility
- Seal the JBC modem port with a cover or tamper-evident seal
- Seal the eSlate Booth-out cable end connector with a cover or tamper-evident seal
- Seal the MBB slot using the door sealing fixtures and/or tamper-evident seal
- Stow booths on caddies and JBC boxes on shelving in a locked, secure area with access restricted to authorized personnel

RBP - Cast a minimum of 20 ballots on each eSlate using a predetermined voting pattern.

3.4.2 eScan System Acceptance Test

- Check receipt of equipment and supplies
- Unbox equipment and supplies
- Set up and test eScan ballot boxes
- Set up and test eScan devices by processing Test Mode ballots
- Use SERVO to:
 - Log the serial numbers of the eScans

- Write the security signing key to the eScans
 - Set the clock in the eScans
 - Verify firmware revisions in the eScans
- Inventory equipment (record serial numbers of eScans)
 - Block the USB Port with a cover or tamper-evident seal
 - Block the network port with a tamper-evident seal when not in use for the connection with SERVO or firmware burn utility
 - Seal the MBB slot with tamper-evident seal
 - Reconfigure eScans and eScan ballot boxes for storage

RBP - Cast a minimum of 50 ballots on each eScan using ballots marked with a predetermined voting pattern.

3.5 Software and Firmware Upgrades

Software and firmware upgrades to the Hart Voting System (HVS) shall only be performed by personnel trained and authorized by Hart InterCivic.

In the case of HVS certified software and firmware, upgrades will only be accomplished using a read-only version of the approved firmware and software supplied directly by the approved federal testing laboratory or the Secretary of State.

Operating system upgrades/updates for the computers on which the HVS applications are installed are subject to the following conditions:

1. Customers will not install any updates to the Windows 2000 operating system (OS) without specific instructions to do so from Hart InterCivic and appropriate install media received directly from Hart or the California Secretary of State.
2. Hart will assess all Windows 2000 updates to determine when distribution to the field and installation on HVS systems may be appropriate. No updates will be identified for distribution by Hart and forwarded to the State of California for approval prior to undergoing functional testing for compatibility with HVS applications.
3. Once an update has been submitted by Hart and approved for distribution by the State, Hart will notify all customers of impending release of the update. Notification will include appropriate installation instructions, an approximate time for distribution of install media and appropriate reporting and documentation actions needed to maintain the currency of system version verification records.
4. Upon receipt of installation instructions and install media, users should contact the Hart Customer Support Center for any assistance needed to accomplish the update. Computers used to run HVS certified software may not be connected to the Internet, or to another computer or server that is connected to the Internet, to download system updates of any kind.
5. Once the update is complete, customers will accomplish the reporting and documentation actions requested by Hart.

Upgrades/updates of any anti-virus software running on a computer on which HVS applications are installed are subject to the following conditions:

1. Customers will not install any updates to anti-virus software without specific approval or instructions to do so from Hart InterCivic, and computers used to run HVS certified software may not be connected to the Internet, or to another computer or server that is connected to the Internet, to download system updates of any kind.
2. Hart and HVS California users will assess 3rd party anti-virus software updates regularly to determine when distribution to the field and installation on HVS systems may be appropriate. Updates will be accomplished, if

available, prior to a jurisdiction's beginning work on a new election. Users should contact the Hart Customer Support Center for specific instructions on installation of updates.

3. Once the update is complete, customers will accomplish the reporting and documentation actions requested by Hart.

3.6 Automated Configuration Verification

Automated configuration verification will be accomplished using the verification tool appropriate for the respective HVS software or firmware.

See the *Tally Computer Setup Procedures for California Users* document and the *Hart Voting System Security CD User Guide* for detailed procedures for using the automated tool that will report all operating system configuration settings and compare the results with expected values as well as automated verification of HVS applications.

See *SERVO Operations Manual 6100-102 Rev. 42-62B* for firmware version verification using the SERVO application designed for this purpose.

4 Election Setup and Definition

4.1 Programming and Configuration of Election Management System

A database for the election is created in the Ballot Origination Software System (BOSS) software, a component of the Hart Election Management System, which is maintained in a secure environment with access limited to authorized personnel.

The BOSS application user interface is described in the *Hart InterCivic Ballot Origination Software System Operations Manual 6100-019 Rev. 43-62B*.

The procedures for using BOSS to create a database for an election are described in the *Hart InterCivic Ballot Origination Software System Training Manual 6300-002 62A*.

4.1.1 Steps for creating a BOSS election database

- Gather data for creating the BOSS election database.
- Create a new election database.
- Enter all jurisdiction information into the BOSS election database.
- In eSlate Options, deselect the option to "print Ballot Key".
- In eSlate Options and eScan options, define new six character passwords for each election for the JBC and the eScan.
- In eSlate Options, define the number of minutes Access Code is Active for the eSlate voting devices.
- eScans must be set to require voter acceptance or poll worker acceptance of over-votes in order for overvoted contests to always generate a voter instruction message that requires action before the overvoted ballot can be cast. A jurisdiction has the option to set the eScan to provide warning of undervotes as well.
 - Note the following RBP: If there are any multi-page ballots in the election and the jurisdiction is using eScans, configure the eScans to require poll worker assistance to accept overvoted ballots. The requirement for poll worker assistance will prevent voters from inadvertently feeding additional ballot pages during the override of the rejected page.
- Enter all election information into the BOSS election database.

- Proofread all information entered into the BOSS election database.
- Generate ballot formats from the election database and preview/print the ballot layouts to proof. RBP - Include the Large Print template (high contrast, large fonts) in the list of eSlate templates to be generated in the database.
- Make necessary corrections to the ballot layouts.
- Ensure the ballot formats are correct and that all passwords for eScans and eSlates have been defined.
- Generate and accept ballot formats.

Note: Accepting the ballot formats for a BOSS election database writes the security signing key created with eCM Manager to the election database AND changes the BOSS data entry fields for election definitions to read-only.

- Create Test and Election MBBs, and create Audio cards for the DAU eSlates.

The *Hart InterCivic Ballot Origination Software System Training Manual 6300-002 62A* contains recommendations in the section entitled Planning Ballot Media Quantities to calculate how many MBBs and Audio cards to write for an election.

Once the election database has been Finalized for Tally within BOSS, no additional MBBs can be written. Therefore, it is recommended that jurisdictions write an additional 10% of the total required MBBs for emergency use.

Note: The election's security signing key is written to each MBB. See Sections 1.2.1 and 10.2.6 for additional information.) Prior to finalizing the BOSS database, make a backup copy of the BOSS database and store the backup in a locked and/or sealed container in a secure location. In the event that the jurisdiction needs to restore the database to write additional MBBs, the restored database is Finalized for use with Tally.

- Finalize the election database for use with Tally. Write the Finalized BOSS database to CD and store in a sealed container in a secure location with access restricted to authorized personnel.

Note: After the election database is Finalized for use with Tally, no more MBBs or Audio cards can be written from the BOSS database.

- Print a copy of the BOSS audit log report to PDF and save to a CD-R for retention with election records.

4.1.2 MBB Use

Prior to being rewritten with ballot data from one election cycle to the next, MBBs are reset for use by using the Hart Memory Card Reformatting Utility. See the *Hart Voting System Security CD User Guide* for detailed procedures to prepare and reformat MBBs, as well as a description of post-reformatting operations.

Once MBBs are prepared by writing ballot data for the election, they must be protected, tracked and maintained with a strict chain of custody. Refer to Section 5.8 Securing Audit Logs and Backup Records for more information.

Each MBB for the election can:

- Configure one Judge's Booth Controller to supply ballot data for the presentation of the ballot to voters on an eSlate voting unit, and record cast vote records; OR
- Configure one eScan to supply ballot data for scanning paper ballots and record cast vote records; OR
- Configure Ballot Now to print paper ballots and record cast vote records.
 - In Ballot Now Print Options, the option to print serial numbers on paper ballots must be disabled.

Note: Ballot Now can print paper ballots to PostScript files for delivery to a print vendor. Printing procedures in Ballot Now are described in Section 6.1.

MBBs from a Judge's Booth Controller, an eScan, or Ballot Now workstation contain CVRs (Cast Vote Records) and are returned to Election Headquarters for tabulation by Tally.

4.2 Programming and Configuration of Vote Recording/Tabulation Devices

After MBBs are reset, jurisdiction- and election-specific information (including precinct information and ballot styles) for Ballot Now, JBC/eSlate devices, and eScans is written and stored on MBBs generated through the Ballot Origination Software System (BOSS). Procedures to program MBBs in BOSS were described in the previous section.

See Sections 4.8 and 7.0 below for procedures to configure vote recording and tabulation devices.

4.3 System Diagnostic Testing Procedures

If any device fails diagnostic testing, refer to Section 5.9 Troubleshooting and Problem Resolution for further information. All firmware must be verified with the configuration verification tool prior to use in each election.

4.3.1 JBC Diagnostic Test

The JBC automatically performs a diagnostic test at power-up and prints the JBC Initialized Report that includes the following information:

- Date / time
- Software version
- Device serial number
- Results of power-on diagnostics (Pass or Fail)

Compare the report to the results of the configuration verification test. Store the JBC Initialized Report in a JBC Diagnostic Test records envelope.

Print a zero tape report from the JBC prior to opening the polls and store with the JBC Initialized Report in the precinct records envelope.

4.3.2 eScan Diagnostic Test

The eScan automatically performs a diagnostic test at power-up and prints the eScan Power-Up Report that includes the following information:

- Date / time
- Software version
- Device serial number
- Results of power-on diagnostics (Pass or Fail)

Compare the report to the results of the configuration verification test. Store the eScan Power-Up Report in an eScan Diagnostic Test records envelope.

Print a zero tape report from the eScan prior to opening the polls and store with the eScan Power-Up report in the precinct records envelope.

4.3.3 Tally Diagnostic Test

Tabulation on the Tally system is operated in a secure environment with access limited to authorized personnel. A new Tally database for each election is created from the election-specific finalized BOSS database. A "zero" Cumulative Report is printed, reviewed and verified before election results are

tabulated. Tabulation requires using the eCM token with password access to confirm the security signing key. File and secure the Zero Cumulative Report with official election records.

4.3.4 Ballot Now Diagnostic Test

A new Ballot Now database is created for each election by using an election-specific MBB and the eCM token with password access to confirm the security signing key. The Ballot Now system is operated in a secure environment with access limited to authorized personnel. At no time shall only one person have sole custody of the paper ballots or Ballot Now computer(s). Before ballot processing begins, an Election Report is printed, reviewed and verified to serve as a zero report. The report is stored in a sealed envelope and secured.

4.4 System Proofing

Proofing of ballots is performed by comparing information generated from BOSS reports with original source documents.

- Generate BOSS reports and compare the data to the information gathered and organized prior to data entry.
 - Active Contests Options List Report
 - Ballot Content Proof Report
 - Ballot Style List by Precinct Report
 - Ballot Style List by District Report
 - Contest List With Details Report
 - Assigned Precinct Report
 - Polling Place List - Early Voting - Detail Report
 - Polling Place List - Early Voting - Summary Report
 - Polling Place List - Election Day Voting - Detail Report
 - Polling Place List - Election Day Voting - Summary Report
 - Precinct List Report
- Ensure that all Contests are on the ballot.
- Ensure that all Options and Proposition Titles/Texts are spelled correctly.
- Verify the correct number of valid choices for each contest has been defined.
- Verify the correct number of write-in options has been specified for each applicable contest.

If election definition and programming is done by Hart InterCivic or a third-party vendor, the vendor will provide sample PDF files of the ballot to the jurisdiction in a zipped and password protected file format via read-only CD or secure FTP so elections officials can proofread the text and layout.

If ballot printing is done by Hart InterCivic or a third-party vendor, elections officials proof a copy of each ballot format/style. A test of scanning paper ballots can be done using Ballot Now and/or an eScan. Test mode MBBs from the election will be required for the Ballot Now test and the eScan test.

4.5 Logic and Accuracy Testing of System and Components

All testing is to be conducted in a secure location with access limited to authorized personnel.

4.5.1 Pre-Conditions for Performance of Tests

The operation of the eSlate System devices (JBCs and eSlate voting units) and eScan devices must be verified prior to deploying the equipment to the polling location. Each piece of equipment must have power applied to verify that it reaches the ready state in the power up cycle. This indicates that the equipment is functioning properly and has passed the resident power-up diagnostics.

- The JBC prints out a report indicating that it, and all connected eSlates, have passed diagnostics and identifies each device by serial number.
- The eScan prints out a report indicating that it has passed diagnostics and the report identifies the device by serial number.
- These reports are retained as part of the election record.

4.5.2 Accuracy Test Procedures

The election-specific accuracy test is an essential method of testing electronic ballots to be used in a particular election to ensure the eSlate System and eScan System devices perform properly. The purpose of this test is to ensure the ballot used with a particular election will function properly when run with the ballot tabulation software for that election.

All ballot logic and accuracy functions of the Hart VS are static. This means that the functions are compiled, tested and verified as part of extensive system testing and certification processes and do not change between elections. The only element of the system that changes from one election to the next is the content and format of the ballots.

Accuracy testing consists of those procedures necessary to ensure election hardware and software are working properly, both as individual units and as a combined system.

Instructions for performing the system accuracy test and the embedded eScan accuracy test are described in the chapter entitled *Logic and Accuracy Testing Procedures*, in the *Hart InterCivic Tally Training Manual 6300-005 62A*. Additional information concerning the Ballot Now accuracy test is described in the section entitled *Elections Office Preparation - Sample Ballots and Logic and Accuracy Test* in the *Ballot Now Training Manual 6300-003 62A*.

Per California Election Code §15000, no later than seven days before Election Day, the local election official shall have the entire system tested to verify that it will properly count the votes cast for all offices and all questions or measures. Successful testing will demonstrate that each candidate and ballot measure receives the proper number of votes, the system accepts only the proper ballot types, and all tabulations are reported accurately. In the case of offices for which the voter is allowed to vote for more than one candidate, at least one ballot shall be voted with the maximum allowed number of choices.

The responsible elections official shall require the accuracy test deck to be prepared and tested. Predetermined results of the accuracy test must be available for inspection and sign-off by the Logic and Accuracy Board.

The pre-election Ballot Inspection and Verification (BIV) for the eSlate System and eScan System ensures that the Electronic Ballot Data provides properly formatted ballots.

4.5.2.1 Ballot Inspection and Verification (BIV) for the eSlate System

This process verifies that the ballot(s) will be correctly presented to the voter for a given revision of the Electronic Ballot Data and that the VBO printout matches the ballot summary screen. Formatting errors or changes require that the information be updated in BOSS. After updating information in BOSS, new ballots must be generated and the verification process is repeated.

The JBC Tally Report can be used to verify the number of votes for each option matches the master tally spreadsheet containing the expected number of votes for each option per ballot style.

4.5.2.1.1 BIV requirements for the eSlate System

- ◆ 1 Test mode MBB containing the Electronic Ballot Data file
- ◆ 1 Audio card containing the recordings for the ballot texts
- ◆ 1 JBC that has been programmed with the security signing key for the new election after verifying previous election data was backed up and properly archived
- ◆ 1 DAU eSlate that has been reset in a separate action using SERVO after previous election data was backed up and properly archived
- ◆ 1 pair of headphones
- ◆ 1 set of tactile input switches
- ◆ 1 VBO
- ◆ The Ballot Content Proof Report printed from BOSS
- ◆ A spreadsheet that tallies the expected total number of votes for each contest option when the option is voted on one ballot from each ballot style

Use the following steps to perform the BIV for ballots presented on the eSlate System.

1. Connect the VBO, the headphones, and the tactile input switches to the DAU eSlate.
2. Connect the JBC to the DAU eSlate.
3. Power-up the VBO.
4. Insert the test MBB in the JBC.
5. Power-up the JBC, print a zero report and open the polls.
6. Using the Ballot Content Proof Report from BOSS, select a representative precinct for the first ballot style and print an Access Code.
7. Put on the headphones.
8. Enter the Access Code into the eSlate and display the ballot. If multiple languages are required, select the language to be verified.
9. Review the text on the ballot and verify the following on each page of the ballot:
 - ◆ The text on the ballot is displayed properly
 - ◆ The correct audio plays for each text area.
 - ◆ The position of contests relative to pages and columns is accurate.
 - ◆ The required contests are present.
 - ◆ The tactile input switches work for navigation and selection.
10. Go to the ballot summary screen and verify the following:
 - ◆ Move to the first contest on the ballot summary screen and verify the formatting of the contest name.
 - ◆ Press ENTER on that contest and verify that the highlight bar returns to the contest on the ballot page.
 - ◆ Select an option in the contest and verify that the highlight bar returns to the summary screen, then verify the formatting of the option on the summary screen.
 - ◆ Repeat for each option in the contest. For contests with write-in options, enter three alpha characters, sequencing through the alphabet for subsequent contests.
11. Repeat Step 10 for each contest.
12. Cast the ballot.
 - ◆ Press the CAST BALLOT button.
 - ◆ Verify that each VBO printout matches the ballot summary screen.
 - ◆ Cast the ballot.
13. Repeat steps 6 through 12 for each ballot style.

14. Close the polls.
15. Remove the MBB from the JBC and read into a Tally test database for tabulation.
16. Print the Tally Precinct Report and verify the number of votes for each option matches the spreadsheet that tallies the expected total number of votes for each contest option when the option is voted on one ballot from each ballot style. File the reports in a secure envelope provided for test materials.
17. Remove the MBB from Tally, label it and retain as part of the Election record. File the reports in a secure envelope provided for test materials.

4.5.2.2 Ballot Inspection and Verification (BIV) for the eScan System

This process verifies that paper ballots are printed correctly and scan correctly in the eScan for a given revision of the Electronic Ballot Data. Formatting errors or changes require that the information be updated in BOSS. After updating information in BOSS, new ballots must be generated and the verification process is repeated

4.5.2.2.1 BIV requirements for the eScan System

- ♦ 2 Test mode MBBs containing the Electronic Ballot Data file (one for the eScan and one for Ballot Now)
- ♦ 1 eScan that has been programmed with the security signing key for the new election after verifying previous election data was backed up and archived
- ♦ The Ballot Content Proof Report printed from BOSS
- ♦ A spreadsheet that tallies the expected total number of votes for each contest option when the option is voted on one ballot from each ballot style

Use the following steps to perform the BIV for ballots scanned into eScan System:

1. Print representative ballot styles from Ballot Now.
2. Review the text on the ballot and verify the following for each ballot style:
 - ♦ The text on the ballot is laid out properly
 - ♦ The position of contests relative to pages and columns is accurate.
 - ♦ The required contests are present.
3. After verifying each of the ballot pages for each ballot style, mark the ballots to vote them according to the spreadsheet.
4. Insert the MBB in the eScan.
5. Power-up the eScan, print a zero report and open the polls.
6. Scan the ballots in the eScan.
7. Repeat the process for each language as required.
8. Close the polls.
9. Remove the MBB from the eScan and read into a Tally test database for tabulation.
10. Print the Tally Cumulative Report and verify that the number of votes for each option matches the spreadsheet that tallies the expected total number of votes for each contest option when the option is voted on one ballot from each ballot style. File the reports in a secure envelope provided for test materials.
11. Remove the MBB from Tally, label it and retain as part of the Election record. File the reports in a secure envelope provided for test materials.

4.5.3 Logic Test Procedures

Ballot logic is verified by the jurisdiction using its Ballot Inspection and Verification process.

Instructions for performing the logic and accuracy testing for the eSlates and eScans are described in the chapter entitled *Logic and Accuracy Testing Procedures of the Hart InterCivic Tally Training Manual 6300-005 62A*.

If a voting machine or the central tabulating system does not accurately count the test script or test vote, the cause for the error shall be ascertained and corrected and an errorless count shall be made before the system is approved for use of counting votes. See Section 8.1 Parallel Monitoring Test for additional information.

4.5.4 Retention of Test Materials

The report of accumulated results from all devices used in the logic and accuracy tests and paper ballots scanned by Ballot Now are contained in the Tally application Cumulative report. The JBC and eScan device Tally reports are printed from the devices used in the logic and accuracy tests.

Copies of the Cast Vote Records and the accumulated results from the logic and accuracy tests shall be secured in locations with restricted access as designated by the jurisdiction:

- For the retention period as required by law
- By order of a court or directive of the Secretary of State

4.5.5 Logic and Accuracy Board and Certification of Testing

Equipment accuracy tests shall be performed prior to the official Logic and Accuracy Certification to the Secretary of State and prior to Election Day. In the event that hardware fails and is subsequently repaired, replaced or adjusted, the accuracy test should be performed again.

The election observer panel should witness the testing as described in Section 4.7.

4.6 Ballot Tally Programs

California Election Code §15001 requires each jurisdiction to submit a copy of its vote tally program to the Secretary of State at least 7 days prior to each election. If there is a subsequent change in the program, an updated copy must be submitted to the Secretary of State by 12 PM on the day of the election.

The Hart Voting System “vote count program” (as used in California Election Code §15001) consists of the Hart software applications and equipment firmware for the jurisdiction’s current Hart Voting System at the time of the election. By agreement with the State of California, this software and firmware code is placed in escrow upon system certification, and is therefore accessible by the Secretary of State if required. No jurisdiction procedure is therefore required for a given election.

4.7 Election Observer Panel Plan

California Election Code §15004 sets forth minimal requirements for observation of the programming and testing of the voting system for each election. Each jurisdiction may allow additional procedures in accordance with its official election observer panel plan. All logic and accuracy testing must be performed in accordance with these requirements for observation. Any jurisdiction using this voting system shall, prior to such use in each election, file with the California Secretary of State a copy of its Election Observer Panel plan.

Note: Elections officials must develop appropriate security procedures for use when representatives of qualified political parties and bona fide associations of citizens and media associations, pursuant to their rights under Elections Code §15004, check and review the preparation and operation of vote tabulating devices and attend any or all phases of the election. The security procedures must permit representatives to observe at a legible distance the contents of the display on the vote tabulating computer or device. This requirement may be satisfied by positioning an additional display monitor or monitors in a manner that allows the representatives to read the contents displayed on the vote tabulating computer or device while also observing the vote tabulating computer or device and any person or persons operating the vote tabulating computer or device.

4.8 Hardware Maintenance and Preparation for Use

4.8.1 Device Maintenance Between Elections

Maintenance procedures for the JBC, eSlate, DAU eSlate, VBO, and eScan devices are minimal. The eSlate and eScan equipment does not require any calibration or regular upgrading. Any problems detected in functionality testing should be re-tested, logged, and equipment returned to Hart InterCivic for replacement. See Section 5.9 for additional information. There are only a few regularly scheduled maintenance procedures necessary:

- Cleaning the equipment screens
- Checking battery levels
- Performing functionality tests
- Other repair, replacement, and miscellaneous maintenance procedures
- PC printer, Ballot Now PC scanner and ballot printer, and PC peripheral maintenance

Note: It is imperative to clean all ballot scanners and ballot printers prior to any testing or use in a live election.

Details of hardware maintenance procedures are described in the section entitled *Maintenance Procedures* in the *Hart InterCivic Hart Voting System Support Procedures Training Manual 6300-006 62C*.

No substitution or modification of the voting system shall be made with respect to any component of the voting system until the Secretary of State has been notified in writing and has determined that the proposed change or modification does not impair the accuracy and efficiency of the voting system sufficient to require a re-examination and approval.

4.8.2 Device Election Preparation

JBC, eSlate, and eScan devices are prepared for use in a new election using the Reset procedure in the SERVO application as described in the chapter entitled *Equipment Administration* in the *SERVO Operations Manual 6100-102 Rev. 42-62B* and in the section entitled *Polling Place Equipment Acceptance and Functionality Test Procedures* in the *Hart InterCivic Hart Voting System Support Procedures Training Manual 6300-006 62D*. Caution: Verify all previous election and audit log data was successfully backed up and properly archived prior to resetting each unit. Backup and Reset must be performed as separate and distinct operations.

In addition:

- Batteries are installed in the JBCs, eSlates, DAU eSlates, and VBOs.
- Printer paper is installed in the JBCs, eScans, and VBOs.
- Program JBCs and eScans with the security signing key for each election to enable these devices to authenticate MBBs for the specific election.
- The eScan scanner path is cleaned using pressurized air.
- The Ballot Now scanner path is cleaned according to the scanner manufacturer's procedures.
- Jurisdictions using more than one eSlate with a JBC must permanently assign each precinct a set of JBC and eSlate devices, identified by serial number, for use in all elections, taking into account equipment replacement needs and precinct consolidations.
- Jurisdictions must secure all voting system components in one or more uniquely serialized, tamper-evident container(s) prior to release to the custody of an Inspector, other poll worker, drayage company or other intermediary, or before jurisdiction personnel deliver them to a secure polling place or secure satellite distribution facility. Transportation of voting system components to the custody of an Inspector, other poll worker, drayage company or other intermediary, secure polling place, or secure satellite distribution facility shall not occur earlier than 10 calendar days prior to Election Day.

- Approved secure tamper-evident containers include:
 - A uniquely serialized, sealed banker's bag
 - A zippered nylon or canvass bag or case on which the zipper(s) that prevent access to the voting system component(s) inside are kept closed by a uniquely serialized, tamper-evident lock; or
 - A hard lid that blocks access to all doors, ports or other points of access to the inside of the voting system component(s) and that is held in place by a latch or latches closed with a uniquely serialized, tamper-evident lock or locks.

4.8.2.1 JBC and eScan Preparation

- Before a JBC or an eScan is deployed to a polling place, the secure signing key is programmed on to the unit and an Election MBB is installed and sealed in the device, which is then configured at the warehouse to assign it to a specific polling place. Device preparation steps are recorded on checklists, listed by device type and device serial number. Detailed checklists for preparation are provided in the *Hart InterCivic Hart Voting System Support Procedures Training Manual 6300-006 62D*.
- Verify all eScan ports are secure
 - ♦ Block USB port with a cover or tamper-evident tape 
 - ♦ Keep the network port (RJ-45) blocked with a cover or tamper-evident tape
- Verify JBC ports are secure
 - ♦ Block the printer port with cover or tamper-evident tape 
 - ♦ Block the modem port with cover or tamper-evident tape
 - ♦ Block the eSlate Booth Out port with cover or tamper-evident tape

Note: If the jurisdiction prefers to define units in the polling place, develop local procedures documentation to guide poll workers on the following tasks:

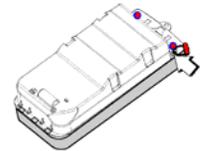
- Install an Election MBB, install a serialized, tamper-evident security seal, and record the MBB ID and serial number of the security seal in the chain-of-custody log and master seal record. 
 - ♦ Place the seals in the appropriate location(s) on the housing to prevent, deter, and/or detect unauthorized access to the internal components of the equipment.
 - ♦ Seal the eScan or the JBC in a lockable case and place serialized, tamper-evident seals on the case to detect unauthorized access into the case.
 - ♦ All seal numbers should be logged in the appropriate Chain of Custody document and a copy of the document included with the precinct supplies for verification prior to the opening of the polls.
- Connect the JBC battery key and then connect the AC power supply. Connect the eScan power supply and press the power switch to ON.
 - ♦ The Start-Up password is entered.
 - ♦ The desired polling place ID is entered.
 - ♦ If available, the choice is made to set the device for Early Voting or Election Day voting.
 - ♦ The JBC Booth Assignment is not necessary at this time and is skipped so that a Zero Tape can be printed.
 - ♦ A Zero Tape is printed.
 - ♦ The device is disconnected from power.
 - ♦ All printed reports are removed from the device printer and placed in a secure election records envelope.
 - ♦ The preparation checklist is updated.

- ◆ The device is labeled with its polling place identifier so that it will be delivered to the targeted polling place.
- ◆ One AC power supply accompanies each JBC and eScan, and one JBC to eSlate cable accompanies each JBC.
- ◆ The device is placed in a box, labeled with the appropriate polling place identifier and grouped with the other equipment for that polling place.

4.8.2.2 VBO Preparation

The procedure for preparation of a VBO unit is described in the Hart Voting System Support Procedures Training Manual 6300-006 62C.

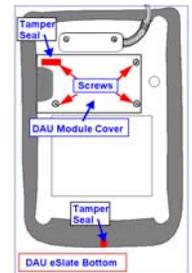
- A new roll of paper is installed in the VBO unit.
- Install a serialized, tamper-evident security seal on the VBO unit case and record the serial number of the security seal.
- The VBO units are installed in the booths (described in Sections 4.8.2.3 and 4.8.2.4).
- One VBO power supply accompanies each VBO unit.



4.8.2.3 eSlate and Booth Preparation

Preparation of an eSlate booth for an election involves installing the eSlate and the VBO in the booth.

- Seal the housing of the eSlate with a serialized, tamper-evident seal to detect unauthorized access to the internal components of the eSlate case.
- ◆ Place a seal on the end of the eSlate over the junction of the top and bottom covers.
- ◆ If the eSlate has a DAU board, place a seal over one of the screws holding the DAU board in place.
 - Connect the eSlate serial port to the pigtail cable in the booth.
 - ◆ Note: Prepare the cable for the booth designated to be at the end of the daisy-chain by removing or keeping blocked with a cover or tamper-evident tape.
 - Install the eSlate securely into place in the booth.
 - Connect the VBO data cable to the VBO unit.
 - Connect the VBO power cable to the VBO unit.
 - Secure power and data cables under the cable retention clips.
 - Lock the VBO unit into place in the booth.
 - Install a security seal through the hole in the VBO security post and record the serial number of the security seal on a master seal log and again on the unit Chain of Custody document.
 - A warning must be posted in each voting booth stating that, pursuant to Elections Code §18564, through §18569, tampering with voting equipment or altering vote results constitutes a felony, punishable by imprisonment.
 - Close the booth.
 - Verify the Cable-In port is blocked with a cover or tamper-evident seal.
 - Physically secure the booth to prevent, deter, and/or detect unauthorized access to the eSlate.
 - Place a tamper-evident seal on the booth where the lid closes over the bottom of the booth to detect any unauthorized access to the equipment inside and record the serial.
 - All seal numbers should be logged and a copy of the appropriate seal numbers included with the precinct supplies for verification prior to the opening of polls.
 - A label can be put on the eSlate booth to indicate its polling place destination.



4.8.2.4 DAU eSlate and Booth Preparation

Preparation of a DAU eSlate booth for voters with disabilities involves installing the DAU eSlate and the VBO in the booth. To facilitate wheelchair access, an accessible voting booth has front legs that are shorter and further apart than the front legs in standard booths.

In addition to the steps for preparation of the eSlate identified in the previous subsection, the following steps must be followed for DAU eSlate preparation:

- Ensure the DAU eSlate booth is labeled with a red stripe on the handle-side to indicate it is an accessible voting booth.
- Install the Audio Card in the DAU eSlate seating it firmly in place. Install a tamper evident seal over the card slot and record the serial number.
- Connect the headphones to the headphone jack in the DAU eSlate.
- Connect the DAU eSlate serial port to the pigtail cable in the booth.
- Install the DAU eSlate securely into place in the booth.
- Tuck the headphones into the storage compartment.
- Verify the Cable-In port is blocked with a cover or tamper-evident seal.
- Prepare the cable for the booth designated to be at the end of the daisy-chain by removing the cable or blocking the cable end connector with a cover or tamper-evident tape.



5 Polling Place Procedures

5.1 Precinct Supplies, Delivery, and Inspection

The jurisdiction provides, delivers, inspects, and secures precinct supplies according to its procedures. Hart InterCivic can supply blank forms that the jurisdiction can customize to facilitate polling place management.

The Hart InterCivic Polling Place Desk References contain instructions for ensuring polling place security:

- eSlate Polling Place System Early Voting Desk Reference 6300-131 62A
- eSlate Polling Place System Election Day Desk Reference 6300-132 62A
- The Hart Voting System Early Voting Desk Reference 6400-113 6.2.A
- The Hart Voting System Election Day Desk Reference 6400-114 6.2A

The *Hart InterCivic Hart Voting System Support Procedures Training Manual 6300-006 62C* contains instructions for:

- Polling place equipment acceptance
- Equipment functionality tests
- Planning for the layout and for the equipment and supplies needed for each polling place
- Delivery of passwords for access to the Judge's Booth Controller or the eScan

Jurisdictions using more than one eSlate with a JBC must permanently assign each precinct a set of JBC and eSlate devices, identified by serial number, for use in all elections, taking into account equipment replacement needs and precinct consolidations.

Jurisdictions must secure all voting system components in one or more uniquely serialized, tamper-evident container(s) prior to release to the custody of an Inspector, other poll worker, drayage company or other intermediary, or before jurisdiction personnel deliver them to a secure polling place or secure satellite distribution facility. Transportation of voting system components to the custody of an Inspector, other poll worker, drayage

company or other intermediary, secure polling place, or secure satellite distribution facility shall not occur earlier than 10 calendar days prior to Election Day.

- Approved secure tamper-evident containers include:
 - A uniquely serialized, sealed banker's bag
 - A zippered nylon or canvass bag or case on which the zipper(s) that prevent access to the voting system component(s) inside are kept closed by a uniquely serialized, tamper-evident lock; or
 - A hard lid that blocks access to all doors, ports or other points of access to the inside of the voting system component(s) and that is held in place by a latch or latches closed with a uniquely serialized, tamper-evident lock or locks.

Immediately upon receipt, all persons receiving precinct equipment and supplies should be required to:

- Inventory and verify the equipment and supplies received
- Verify the integrity of the exterior tamper-evident seals has not been breached. RBP - Verify seal serial numbers match the original seal numbers listed on the Chain of Custody or other document provided by the jurisdiction.
- Two officials sign the Chain of Custody document for receipt of the equipment and supplies

5.1.1 JBC/eSlate Polling Place Equipment and Supplies

Upon request, members of the public must be permitted to observe and inspect, without physical contact, the integrity of all externally visible security seals used to secure voting equipment in a time and manner that does not interfere with the conduct of the election or the privacy of any voter.

Equipment for each precinct at a JBC/eSlate polling place includes:

- Booths with an eSlate and a VBO
- Accessible booth(s) with a DAU eSlate and Audio card, a VBO, tactile input switches, headphones
- Judge's Booth Controller(s) with the Election MBB
- Power strip(s)/Surge protector(s)

Supplies for each precinct at a JBC/eSlate polling place include:

- Chain of Custody document
- Instructions for verifying the seal number and integrity of each seal during setup and prior to opening the polls, periodically throughout Election Day, and upon close of the polls.
- Instructions for signing and securing the Chain of Custody document.
- Instructions for handling and reporting the situation if the integrity of any seal has been breached or there is any indication that the chain of custody has been compromised as described in Section 10.5.
- Instruction manuals
- Logs and secure envelopes for managing records collected during voting.

5.1.2 eScan and JBC/eSlate Polling Place Equipment and Supplies

In addition to the equipment and supplies listed in Section 5.1.1 for a JBC/eSlate polling place, the equipment and supplies required for using eScans are:

- Privacy Booths (for purposes of marking paper ballots) with a warning posted stating that, pursuant to Elections Code §18564 through §18569, tampering with voting equipment or altering vote results constitutes a felony, punishable by imprisonment.

- A blue or black ink pen for marking paper ballots
- eScan device with the Election MBB installed and sealed
- eScan ballot box
- Paper ballots for each ballot style in the polling place
- Privacy sleeve for ballot and instructions for its use in accordance with Elections Code §14272.

5.2 Polling Place Setup

5.2.1 JBC/eSlate Polling Place Setup

The eSlate System voting equipment for a polling place includes an MBB installed in a JBC and from one to twelve booths containing VBOs and eSlates or DAUs. During voting day, the JBC is used to communicate with the eSlates and print Access Codes for voters. The following documents that contain poll worker instructions from Hart InterCivic are provided to each polling place:

- eSlate Polling Place System Early Voting Desk Reference 6300-131 62A
- eSlate Polling Place System Election Day Desk Reference 6300-132 62A

These desk references provide specific instructions for polling place security, troubleshooting problems, serving voters with disabilities, and definitions of terms.

In general, polling place setup includes the following steps:

1. The integrity of the tamper-evident seals must be verified and witnessed by at least two poll workers prior to opening each case containing voting equipment or ballots. After opening each case, the integrity and serial number of each security seal on each piece of voting equipment must be verified and witnessed by at least two poll workers. If it is determined there has been a breach of any security seal, the poll workers must immediately notify the jurisdiction's chief election official in accordance with the jurisdiction's procedures.
2. Equipment must be located in a way that maximizes traffic flow, yet allows for clear observation of all equipment by poll workers to deter or identify any tampering or attempt at tampering while preserving the public's right to inspect equipment and security seals. Instructions for assembly and setup of the eSlate and JBC are described in the desk references mentioned above.
3. Display a copy of materials required by the Elections Code in each booth, including a warning that tampering with voting equipment or altering vote results constitutes a felony, punishable by imprisonment.
4. When multiple eSlates are used in a polling place, and the configuration includes an accessible DAU eSlate to be used for curbside voting, the accessible DAU must be located as the last booth in the "daisy-chain" from the JBC. Ensure that this device's eSlate-to-Booth cable is secured within the booth and not externally exposed. RBP - Seal the storage compartment door with tamper-evident tape.
5. During setup, the supply of paper in the JBC must be verified in accordance with instructions detailed in the desk references noted above.

Note: Printer paper for the VBO is loaded at the warehouse before the VBO is secured to the voting booth. See the section *Hart Voting System VBO Paper Roll Management* in the *Hart Voting System Support Procedures Training Manual 6300-006 62C*.
6. Basic operational ability for each piece of equipment must be tested and confirmed in accordance with the vendor's instructions detailed in the desk references mentioned above.
7. A configuration report prints at device power up. Verify the polling place name and assigned precincts. If a Zero Tape is desired, print Zero Tape(s) and verify. All reports are signed by all poll workers and secured with other polling place records prior to the opening of the polls.
8. The Oath of Office and Declaration of Intention forms must be completed pursuant to California Election Code §12321.

5.2.2 eScan Polling Place Setup

The eScan System voting equipment for a polling place includes an MBB installed in an eScan and privacy booths. During voting periods, the voters mark their paper ballots in the privacy booths, and then scan their ballots in the eScan.

The following documents that contain poll worker instructions from Hart InterCivic are provided to each polling place:

- *The Hart Voting System Early Voting Desk Reference 6400-113 6.2A*
- *The Hart Voting System Election Day Desk Reference 6400-114 6.2A*

These desk references provide specific instructions for polling place security, troubleshooting problems, serving voters with disabilities, and definitions of terms.

In general, polling place setup includes the following steps:

1. The integrity of the tamper-evident seals must be verified and witnessed by at least two poll workers prior to opening each case containing voting equipment or ballots. The integrity and serial number of each security seal on each eScan must be verified and witnessed by at least two poll workers. If it is determined there has been a breach of any security seal, the poll workers must immediately notify the jurisdiction's chief election official in accordance with the jurisdiction's procedures.
2. Equipment must be located in a way that maximizes traffic flow, yet allows for clear observation of all equipment by poll workers to deter or identify any tampering or attempt at tampering while preserving the public's right to inspect equipment and security seals. Instructions for assembly and setup of the eScan are described in the desk references mentioned above.
3. Display a copy of materials required by the Elections Code in each privacy booth.
4. During setup, the supply of paper in the eScan must be verified in accordance with the vendor's instructions detailed in the desk references mentioned above.
5. The metal plate covering the emergency ballot receptacle inside the ballot box must be in the open position.
6. The emergency ballot receptacle must be seated securely within the rails located along the top of the inside of the ballot box.
7. The ballot box door must be closed and locked, and the ballot box key stored in a secure location known to the poll worker.
8. Basic operational ability for each eScan must be tested and confirmed in accordance with the vendor's instructions detailed in the desk references mentioned above.
9. A configuration report prints at device power up. Verify the polling place name and assigned precincts. If a Zero Tape is desired, print a Zero Tape(s) and verify. All reports are signed by all poll workers and secured with other polling place records prior to the opening of the polls.
10. The Oath of Office and Declaration of Intention forms must be completed pursuant to California Election Code §12321.

5.3 Opening the Polls

5.3.1 JBC/eSlate Opening the Polls

The polls can be opened when the Open Polls option is displayed on the JBC Ready To Open Polls screen.

- When the polls are scheduled to open, a poll worker must press Open Polls and then enter the password.
- After the Polls Opened report prints, tear off the printed reports and file the reports in a secure envelope for polling place records.

- The Inspector should then announce that the polls are open.

5.3.2 eScan Opening the Polls

The polls can be opened when the Open Polls option is displayed on the eScan Ready to Open Polls screen.

- When the polls are scheduled to open, a poll worker must press Open Polls and then enter the password.
- After the Polls Opened report prints, tear off the printed reports and file the reports in a secure envelope for polling place records.
- The Inspector should then announce that the polls are open.

5.4 Polling Place Procedures

A poll worker must attend the JBC at all times while the JBC is in the “polls opened” state to monitor booth status lights on the JBC and to issue Access Codes. No poll worker or other person may record the time at which, or the order in which, voters vote in a polling place.

5.4.1 eSlate Voting

Each voter must be provided an Access Code when offering to vote using an eSlate.

After a voter has signed in and the election inspector has verified the voter is registered to vote within the polling place, the inspector issues an Access Code from the JBC in accordance with the vendor instructions. The voter is then given the Access Code and directed to a booth whose status light on the JBC is GREEN. The poll worker should only print an Access Code when a voter is ready to vote and an eSlate booth is available for that voter.

5.4.2 eScan Paper Ballot Voting

Each voter must be provided a privacy sleeve with associated instructions to conceal the paper ballot in accordance with Elections Code §14272.

After a voter has signed in and the election inspector has verified that the voter is registered to vote within the polling place, the inspector issues the voter a paper ballot for his/her precinct and a privacy sleeve. The inspector directs the voter to a privacy booth containing a blue or black ink pen with which to mark the ballot. The voter then scans his or her ballot in the eScan.

5.4.3 “Fleeing Voter”

A “fleeing voter” is a voter who leaves the voting booth and polling place without finalizing and casting his or her ballot. For paper ballots, such a situation can be identified by the fact that the paper ballot was left in the voting booth. On the JBC, such a situation can be identified by the fact that the particular booth indicator light on the JBC is RED and there is no voter in the booth.

The California Secretary of State Uniform Vote Counting Standards, Section VII B specifies that once the poll workers have determined that the voter has indeed left the polling place without casting the ballot, a poll worker should cast the ballot as it had been voted up to that point without examining how any of the vote choices had been recorded by that voter.

5.4.4 Inspection of Equipment and Seals by Voter

Upon request, members of the public must be permitted to observe and inspect, without physical contact, the integrity of all externally visible security seals used to secure voting equipment in a time and manner that does not interfere with the conduct of the election or the privacy of any voter.

5.5 Special Needs Voters

A voter with special needs may optionally use the DAU eSlate voting unit to cast a ballot. This unit shall be configured and equipped to support such voters in the following manner:

- Large Print template (high contrast and large fonts) available for the screen display;
- Audio ballot instruction in all required languages via headphones;
- Binary tactile switches ('jelly switches') for ballot navigation and voting; and
- Interface for voter supplied binary-switch medical input device, including a sip-puff device.

Finally, the DAU eSlate booth may be disconnected from the JBC/eSlate chain to provide curbside voting.

The following documents from Hart InterCivic provide instructions to the poll worker for serving voters with disabilities:

- *eSlate Polling Place System Early Voting Desk Reference 6300-131 62A*
- *eSlate Polling Place System Election Day Desk Reference 6300-132 62A*
- *The Hart Voting System Early Voting Desk Reference 6400-113 6.2A*
- *The Hart Voting System Election Day Desk Reference 6400-114 6.2A*

5.5.1 Accessible Voting Booth Guidelines

In accordance with the jurisdiction policies, the poll worker may provide assistance to the special needs voter in entering the eSlate Access Code and initializing the ballot for voting, as required or as requested by the voter.

The poll workers are responsible for ensuring that special needs voters are able to vote privately.

5.5.2 Curbside Voting

Curbside voting with the eSlate requires that an entire voting booth be disconnected and transported out to the voter.

Exact instructions for providing curbside voting can be found in the section entitled *Curbside Voting* in the Hart InterCivic polling place desk references: *eSlate Polling Place System Early Voting Desk Reference 6300-131 62A* and *eSlate Polling Place System Election Day Desk Reference 6300-132 62A*.

An Access Code must be issued and input into the eSlate by the poll worker *before* it is disconnected from the JBC/eSlate daisy chain.

After the voter has completed and cast his/her curbside ballot, the poll worker is required to reconnect the eSlate to the JBC/eSlate daisy chain and verify that the ballot has been successfully recorded before allowing the voter to depart the polling place.

5.6 Provisional Voters

5.6.1 In Precinct

5.6.1.1 eSlate System Provisional Ballots

If a voter's eligibility to vote cannot be verified, the voter is allowed to vote a ballot provisionally and a determination as to his/her eligibility is made after some investigation following the close of the polls.

In this situation, the poll worker issues a provisional ballot Access Code from the JBC in accordance with Hart operating instructions in the section entitled *Adding Provisional Voters* in the *eSlate Polling Place System Early Voting Desk Reference 6300-131 62A* and the *eSlate Polling Place System Election Day Desk Reference 6300-132 62A*. This Access Code includes a Provisional Voter Stub that the voter must sign. This stub is retained by the poll worker, together with any other provisional ballot documentation required by the jurisdiction. Finally, the provisional voter must be provided instructions and appropriate documentation to assist in determining after the election whether or not his/her ballot was counted and, if not, the reason it was not counted.

5.6.1.2 eScan System Provisional Ballots

A provisional voter can use an eScan System's paper ballot. For a provisional paper ballot, the poll worker must:

- Fill out the documentation required by the jurisdiction for a provisional paper ballot and give the provisional voter any required documentation.
- Instruct the voter that he/she cannot be allowed to scan their paper ballot in the eScan, but must return his/her ballot in its privacy envelope to the poll worker.
- File the provisional ballot with its documentation in a secure ballot transfer case.
- Provide to the voter instructions and appropriate documentation to assist in determining after the election whether or not his/her ballot was counted, and, if not, the reason it was not counted.

During the official canvass, if a provisional voter's eligibility to vote is confirmed, the provisional ballot may be scanned through an eScan or Ballot Now.

5.6.2 Extended Voting Time

If the poll closing is extended beyond the normal closing time by court order, all voters who are allowed to vote during that period must vote a provisional ballot, in accordance with California Election Code §14402.5. In such instances, the procedures outlined in Section 5.6.1, above, must be followed.

5.7 Closing the Polls and Reporting Unofficial Vote Totals

5.7.1 General

In accordance with California Election Code §14400 – §14402, at the closing of the polls, all members of the precinct board must be present. Promptly, at the official closing time:

- A member of the precinct board must announce loudly, "The polls are now closed."
- Any eligible voters that are in the process of voting at the time of closing shall be allowed to complete their ballot.
- If there are eligible voters in line to vote at the time of the poll closing, these voters shall be allowed to vote a normal ballot.
- Any voters arriving after the polls have closed shall not be allowed to vote.

5.7.2 Closing the Polls on the JBC/eSlates

At the end of an Early Voting day or on Election Day after all the voters have finished voting:

- Press the CLOSE POLLS button located below the JBC screen.
- Enter the Close Polls password.
 - For Early Voting, the polls are suspended and can be re-opened on the next Early Voting day.
 - For Election Day voting, the polls are closed.

5.7.3 Closing the Polls on the eScan

At the end of an Early Voting day or on Election Day after all the voters have finished voting:

- Press the red PW button located on the back of the eScan.
- Enter the Poll Worker password.
- Press the button next to CLOSE POLLS.
- Enter the Close Polls password.
 - For Early Voting, the polls are suspended and can be re-opened on the next Early Voting day.
 - For Election Day voting, the polls are closed.

5.7.4 Printing Polling Place Reports

5.7.4.1 JBC and eScan Early Voting Reports

When the polls are suspended, the JBC and eScan automatically print the reports for the day. The poll worker tears off the reports, completes the Reconciliation Log form, and secures both in the appropriate envelope(s).

RBP - The poll worker prints a final Polls Suspended Report and leaves that report attached to the JBC or the eScan.

5.7.4.2 JBC Election Day Tally Report

- For Election Day voting, the Polls Closed screen on the JBC includes the capability for printing the Tally Report, the Write-In Report and the Access Code Report.
 - ♦ Select the Access Code Report option on the JBC. Repeat as necessary to print the desired number of reports.
 - ♦ Select the Print Write-In Report option on the JBC. Repeat as necessary to print desired number of reports.
 - ♦ Select the Print Tally option on the JBC. Repeat as necessary to print desired number of reports.
 - ♦ One report must be posted outside the polling place.
 - ♦ One must be retained in the secure polling place records envelope.
 - ♦ RBP - Print a third report to remain on the JBC for secure transport to central tabulation.
 - ♦ Each poll worker must sign all printed reports.

Note: Although the JBC does not have the capability to print an audit log report in the polling place, audit log information is available via the *Device Audit Log* report once the devices are backed up using SERVO at Election Headquarters.

5.7.4.3 eScan Election Day Tally Report

For Election Day voting, the Polls Closed screen on the eScan includes the capability for printing the Tally Report.

- Select the Print Tally option to print each copy of the report.
- One report must be posted outside the polling place.
- One must be retained in the polling place records envelope.
- RBP - Print a third report to be left on the eScan for secure transport to central tabulation.
- Each poll worker must sign all printed reports.

Note: Although the eScan does not have the capability to print an audit log in the polling place, audit log information is available via the *Device Audit Log* report once the devices are backed up using SERVO at Election Headquarters.

5.7.5 Precinct Level Voting Records Audit and Reconciliation

One of the Precinct Board's primary responsibilities is to accomplish precinct level audits of voting activities and records. The Board's responsibilities include: validating the accuracy and completeness of precinct records of the election, identifying and resolving any discrepancies noted, and notifying the jurisdiction's chief election official of any irregularities and/or discrepancies that require further attention at the jurisdiction level.

Note: Although neither the JBC nor the eScan have the capability to print an audit log in the polling place, audit log information is available via the *Device Audit Log* report once the devices are backed up using SERVO at Election Headquarters.

5.7.5.1 Early Voting DRE Voting Records

Members of the precinct board will utilize data from JBC reports and other polling place records to audit voting activity when polls are suspended at the end of each day of Early Voting.

Audit data will be recorded on reconciliation logs that will contain the following fields, as a minimum:

- Polling place name and date(s) of voting
- JBC Start of Day Public Count (JBC Election Identification Report and the lower right corner of the JBC screen)
- Total ballots cast each day (JBC Polls Suspended Report – Daily Summary - Access Codes Voted)
- Total number of voters checked in daily (Polling place records)
- JBC End of Day Public Count (JBC Polls Suspended Report Cumulative Summary and lower right corner of the JBC screen)
- Cumulative total voters checked in for the Early Voting period (Polling place records)
- Total number of Access Codes Issued, Expired and Cancelled each day (Polls Suspended Report Daily Summary)
- Total number of Access Codes Issued, Expired and Cancelled for the Early Voting period (Polls Suspended Report Cumulative Summary)

5.7.5.2 Election Day DRE Voting Records

Procedures for Election Day audit and reconciliation in the polling place are the same as those for Early Voting above, with the following exceptions:

- In Election Day Mode, the JBC prints the Polls Closed Report instead of the Polls Suspended report.
- Additionally, in Election Day mode, the JBC will print a Tally tape, which includes the number of ballots cast in each precinct.
- The JBC Write-In Report is only available in Election Day mode and provides the number of write-ins recorded by precinct and then contest.
- Reconciliation Log fields for Election Day are the same as Early Voting except only a daily total is needed for ballots cast and voters checked in.

5.7.5.3 Early Voting eScan Voting Records

Members of the precinct board will utilize data from eScan reports and other polling place records to audit voting activity when polls are suspended at the end of each day of Early Voting.

Audit data will be recorded on reconciliation logs that will contain the following fields, as a minimum:

- Polling place name and date(s) of voting
- eScan Start of Day Public Count (eScan Election Identification Report)
- Total ballots cast each day (eScan Detail Report)
- Total number of voters checked in daily (Polling place records)
- Cumulative total ballots cast for the Early Voting Period (eScan Detail Report and/or Polls Suspended Report)
- Cumulative total voters checked in for the Early Voting period (Polling place records)

- Total number of paper Provisional ballots for each day and for the voting period if applicable (Count Provisional ballot envelopes)
- Total number of Un-scanned Voted Ballots in the Emergency Ballot Box
- The paper ballot supply for each polling place will be tracked by logging the following information, at a minimum:
- Total number of ballots by precinct delivered to the polling place at the start of the voting period
- Total number of unvoted ballots by precinct remaining at the end of the voting period

5.7.5.4 Election Day eScan Voting Records

Procedures for Election Day audit and reconciliation in the polling place are the same as those for Early Voting above, with the following exceptions:

- In Election Day Mode, the eScan will print close Polls reports instead of Suspend Polls reports.
- Additionally, in Election Day mode, the eScan will print a Tally tape, which includes the number of ballots cast in each precinct.
- Reconciliation Log fields for Election Day are the same as Early Voting Reconciliation Log fields except only a daily total is needed for ballots cast and voters checked in.
- The paper ballot supply for each polling place will be tracked by logging the following information, at a minimum:
 - ◆ Total number of ballots by precinct delivered to the polling place
 - ◆ Total number of unvoted ballots by precinct remaining at the close of polls

5.7.5.5 Early Voting Paper Ballot Voting for Central Count

Members of the precinct board will utilize data from polling place records to audit Early Voting for paper ballots processed in a Central Count environment with either Ballot Now or eScan scanners.

Ballots are grouped in batches for processing. It is not necessary to sort ballots into batches by precinct. Audit data will be recorded on reconciliation logs that will contain the following fields, as a minimum:

- The batch number for each group of ballots, assigned either manually on ballot storage documents or assigned automatically by Ballot Now (Ballot Now Scan Batch Report)
- Polling place name and date(s) of voting for ballots in each batch (Polling place and ballot storage records)
- The precinct number if ballots in the batch are all from the same precinct
- Total number of ballots in the batch prior to scanning (Polling place or ballot storage records)
- Total number of ballots processed through the scanner for each batch (Ballot Now Scanned Ballots by Batch Report or eScan Detail report printed after each batch)
 - ◆ Total number of ballots successfully scanned (Ballot Now Scanned Batch Report or eScan Detail Report)
 - ◆ Number of ballots damaged or rejected and unable to be rescanned and removed for duplication (Ballot Now Scanned Batch Report or eScan Detail Report)
- Cumulative total of all ballots processed through the scanner for all batches (Ballot Now Election Report or Scanned Ballots by Batch Report or eScan Detail Report)
- Cumulative total number of ballots processed through the scanner by precinct (Ballot Now Scanned Ballots by Precinct Report or eScan Detail Report)
- Total number of voters checked in for the Early Voting period (Polling place records)

5.7.5.6 Election Day Paper Ballot Voting for Central Count

Procedures for Election Day audit and reconciliation in the Central Count environment are the same as those for Early Voting above with the following exceptions:

- The eScan will print a Tally tape, which includes the number of ballots cast in each precinct.
- Reconciliation Log fields for Election Day are the same as Early Voting Reconciliation Log fields.
- The paper ballot supply for duplicating ballots at Central Count will be tracked by logging the following information, at a minimum:
 - ◆ Total number of ballots by precinct delivered to Central Count.
 - ◆ If ballots are printed on demand in Ballot Now for duplication, the total number of ballots printed is available on the Ballots Printed By Precinct Report
- Total number of unused ballots by precinct remaining at Central Count, if any

5.7.5.7 Audit Records Review

Prior to securing polling place audit records for transfer to Election Headquarters, members of the precinct board should review requisite audit information to identify and document any especially unusual occurrences or operational anomalies that require further analysis or should be brought to the attention of the jurisdiction's election staff leadership. Such items identified during the review should be reported directly to Election Headquarters with specific documentation to follow with the polling place records.

5.7.6 Monitoring by the Secretary of State

The Secretary of State reserves the right to monitor activities before, during, and after the election at any precinct or Registrar of Voters' office, and may, at his or her discretion, conduct a random parallel monitoring test of voting equipment.

Note: Each polling place must be equipped with a method or log, in a format specified by the Secretary of State after consultation with the jurisdiction users, to record all problems and issues with the voting equipment in the polling place as reported by voters or observed by poll workers. Such records must include the following information for each event:

- Date and time of occurrence
- Voter involved, if any
- Equipment involved
- Brief description of occurrence
- Actions taken to resolve issue, if any
- Election official(s) who observed and/or recorded the event

All such event logs or reports must be made available to the public for inspection and review upon request. Prior to or concurrent with the certification of the election, the jurisdiction election official must submit a report to the Secretary of State of all reported problems experienced with the voting system and identifying the actions taken, if any, to resolve the issues.

5.8 Securing Audit Logs and Backup Records

Jurisdictional procedures may require that the entire JBC or eScan device be returned to Election Headquarters, or require that the MBB be removed from the JBC or eScan, so that only the MBB is transported to Election Headquarters on Election Day.

Note: Poll workers must secure all voting system components in one or more uniquely serialized, tamper-evident container(s) for return to the jurisdiction headquarters or satellite pickup facility.

Electronic components of a voting system not transported back to the jurisdiction headquarters on election night must be secured in one or more uniquely serialized, tamper-evident container(s) and placed in secured storage. The use procedures must impose the same requirements for signed logging of the inspection of security containers and the removal and return of voting system components to security containers that apply to security seals and locks on the voting system components themselves.

Approved secure tamper-evident containers include:

- A uniquely serialized, sealed banker's bag
- A zippered nylon or canvass bag or case on which the zipper(s) that prevent access to the voting system component(s) inside are kept closed by a uniquely serialized, tamper-evident lock; or
- A hard lid that blocks access to all doors, ports or other points of access to the inside of the voting system component(s) and that is held in place by a latch or latches closed with a uniquely serialized, tamper-evident lock or locks.

5.8.1 Printed Reports Transport

All reports printed from the JBC or eScan (Open Polls Report, Close Polls Report, Suspend Polls Report, Access Code Report for the JBC, Write-In Report, Tally Report), all reconciliation logs, all Provisional Ballot Stubs from eSlate voting, all provisional paper ballots and associated documents from an eScan polling place, and any other jurisdiction documents from the polling place must be sealed in a tamper evident container and transported to Election Headquarters in the possession of more than one member of the precinct board. (See note above regarding secure transport containers.)

5.8.2 MBB Transport

If the instructions are to remove the MBB from the JBC or eScan at the end of the day:

- The MBB must be placed in a secure, tamper-evident sealed container.
- The MBB must never be in the sole custody of one person until after such time as it has been read into Tally and its CVRs have been tabulated.
- To remove the MBB from the device:
 - Record the number on the security seal for the MBB compartment.
 - Remove the Security Seal over the MBB compartment on the device.
 - Take the MBB out of the slot and place in a MBB transfer container.
- Secure the transfer container with a tamper-evident seal. (See note above regarding secure transport containers.)
- Record seal serial numbers on the Chain of custody document. Have two poll workers sign.
- Return the MBB to Election Headquarters with a copy of the Chain of Custody document.

5.8.3 JBC Transport

If the instructions require that the entire JBC be transported to Election Headquarters, without removing the MBB, the JBC must never be in the sole custody of one person until after such time as its MBB has been read into Tally and its CVRs have been tabulated.

- Unplug the JBC and disconnect it from the eSlate.
- With multiple members of the precinct board, inspect the integrity of the seal on the MBB door and verify the serial number with the serial number log.
- Return the JBC to Election Headquarters with the Chain of Custody document. (See note above regarding secure transport containers.)
- RBP – Use SERVO to backup the JBC immediately after removing the MBB for tabulation. Caution: Confirm the MBB has been removed and the “Reset” check box in SERVO is **not** enabled before performing a backup.

5.8.4 eScan Transport

If the instructions require that the entire eScan device be transported to Election Headquarters, without removing the MBB, the eScan must never be in the sole custody of one person until after such time as its MBB has been read into Tally and its CVRs have been tabulated.

- Unplug the eScan from power.
- With multiple members of the precinct board, inspect the integrity of the seal on the MBB compartment and verify the serial number with the serial number log.
- Remove paper ballots from the eScan tub and place in a ballot transfer case.
- Secure the ballot transfer case with a serialized, tamper-evident seal and log the serial number.
- Return the eScan and ballot transfer case to Election Headquarters with the Chain of Custody document. (See note above regarding secure transport containers.)
- RBP - Use SERVO to backup the eScan immediately after removing the MBB for tabulation. Caution: Confirm the MBB has been removed and the "Reset" check box in SERVO is **not** enabled before performing a backup.

5.8.5 VBO Transport

If the instructions are to remove the VBO from the voting booth at the end of the day for transport to Election Headquarters, the VBO must never be in the sole custody of one person.

- Unplug the VBO from power
- With multiple members of the precinct board, inspect the security seal placed through the hole in the VBO security post and verify the serial number with the serial number log on the Chain of Custody document and two poll workers sign.

To remove the VBO from the booth:

- Confirm the integrity of the tamper evident seal and verify seal serial number.
- Remove the seal from the security post and place in a secure envelope with precinct records.
- Unlock the VBO unit and remove from the booth.
- Disconnect the VBO power cable to the VBO unit.
- Disconnect the VBO data cable.
- Verify the integrity of the tamper evident seal on the VBO case and verify the serial number with the Chain of Custody document.
- Log the serial number on the Chain of Custody document.
- Remove the VBO from the booth and secure in a transfer container. (See note above regarding secure transport containers.)

Note: Poll workers are not permitted to have access to any VBO audit records.

5.9 Troubleshooting and Problem Resolution

Polling place supplies must include a clear reference document on the eSlate/eScan error codes.q2` This document should include the error number, the meaning and cause of the error, and the approved means for resolution. Troubleshooting instructions should include:

- How to handle VBO paper jams (including the requirement that the VBO printer is never to be opened in a polling place).
- How to clear ballot jams in the eScan (including prohibition of opening the ballot box while the polls are open).

This document should be made available for review by any voter who encounters a cryptic error message that is not clear and easy to understand.

Each polling place must be equipped with a method or log in a format specified by the Secretary of State after consultation with the jurisdiction users to record all problems and issues with the voting equipment in the polling

place as reported by voters or observed by poll workers. Such records must include the following information for each event:

- Date and time of occurrence
- Voter involved, if any
- Equipment involved
- Brief description of occurrence
- Actions taken to resolve issue, if any
- Election official(s) who observed and/or recorded the event

All event logs or reports must be made available to the public for inspection and review upon request. Prior to or concurrent with the certification of the election, the jurisdiction election official must submit a report to the Secretary of State of all reported problems experienced with the voting system and identifying the actions taken, if any, to resolve the issues.

Note: If a voting device experiences a fatal error from which it cannot recover gracefully (i.e. the error is not handled through the device's internal error handling procedures with or without user input), such that the device must be rebooted or the device reboots itself to restore operation, the following actions must be taken:

- The chief election official of the jurisdiction must be notified immediately.
- The equipment must be removed from service immediately and replaced as soon as possible.
- Any votes cast on the device prior to its removal from service must be subject to a 100% manual tally, by the process described in Elections Code §15360, over and above the normal manual tally conducted during the official canvass, as defined in Elections Code §336.5. Notice to the public of this manual tally may be combined with the notice required by any other manual tally required in this order or by Elections Code §15360.
- Any memory card containing data from that device must be secured and retained for the full election retention period.
- A backup of all device Cast Vote Records and system audit logs will be recorded to write-once media and retained securely for the full election retention period.
- The vendor or jurisdiction shall provide an analysis of the cause of the failure.
- Upon request by the Secretary of State, the vendor or jurisdiction shall retain the device for a reasonable period of time to permit forensic analysis.
- All device software and firmware must be reinstalled from a read-only version of the approved firmware and software supplied directly by the approved federal testing laboratory or the Secretary of State before the equipment is placed back into service.

5.9.1 JBC/eSlate Polling Place Troubleshooting

Detailed trouble shooting and problem resolution information is provided in the following Hart InterCivic documents:

- *eSlate Polling Place System Early Voting Desk Reference 6300-131 62A*
- *eSlate Polling Place System Election Day Desk Reference 6300-132 62A*

If the VBO stops printing because of a paper jam, the entire VBO device must be removed from the voting booth and replaced with another VBO device and security seals, or the booth containing the non-functioning VBO must be closed for use by voters. A VBO device is never opened in a polling place.

5.9.2 eScan Polling Place Troubleshooting

Detailed troubleshooting and problem resolution information is provided in the following Hart InterCivic documents:

- *The Hart Voting System Early Voting Desk Reference 6400-113 6.2A*
- *The Hart Voting System Election Day Desk Reference 6400-114 6.2A*

If a paper jam occurs in the eScan, do not unlock and open the eScan ballot box. Cycle power on the eScan to determine whether the jammed ballot is ejected upon restart. If the ballot remains jammed, to expose the ballot, open the scanner cover by lifting the black external scanner cover (located near the feeder slot on the left side of the eScan), then lifting the internal scanner cover. To clear the paper jam, pull the ballot out of the scanner path, and then close the scanner covers. If the ballot is not damaged, try scanning it again. If the ballot is damaged, spoil the ballot according to local instructions and issue a replacement ballot to the voter.

6 Paper Ballot Procedures for Central Tabulation

Paper ballots are printed and processed for Cast Vote Records (CVRs) using the Ballot Now application.

Ballot Now is designed to support paper-based voting solutions, either as a stand-alone system for smaller entities or to complement the Hart Voting System suite of products. Ballot Now manages a print-on-demand capability to print test mode ballots, sample ballots, and official ballots for delivery to the voter. The same information used to print the ballot is used to define a digital scanning template for processing voted ballots. Once the voter returns his/her marked ballot, Ballot Now uses a high-speed scanner to create electronic images of the paper ballot, and then applies voting logic to the digital image and extracts the CVR. Ballot Now provides functionality to:

- Apply voting logic to preview and resolve overvoted and undervoted ballots, and write-ins
- Electronically store election records
- Manage the process of writing Cast Vote Records (CVRs) to the MBB for transfer to Tally for tabulation as Election Day, Early Voting or Absentee results
- Supply a variety of reports about the ballot processing and related activities that can be viewed and printed at any time

Ballot Now is to be used only as a central processing application and is not to be deployed to remote locations outside of the jurisdiction's central election headquarters. The workspace housing all components shall be a secure, locked area with access restricted to authorized personnel. At no time shall only one person have sole custody of ballots. RBP – Implement the two-person rule where no single person is alone with or has sole custody of Hart Election Management computer(s).

6.1 System Startup Procedures

Ballot Now receives data from BOSS via the Ballot Now MBB and delivers data to Tally via the Ballot Now MBB. The system receives input from the user and from scanned ballots, and provides the user with reports. The ballot content and layout for paper ballots for an election are defined and proofed in BOSS. When paper ballot templates are selected for generating the ballot styles, BOSS automatically adds a polling place named Ballot Now so that at the time of tabulation in the Tally application, Tally will read MBBs that contain CVRs processed by the Ballot Now application.

6.1.1 Printing Paper Ballots

Detailed instructions for printing ballots from Ballot Now are described in the *Hart InterCivic Ballot Now Operations Manual 6100-067 Rev. 33-62B* and the *Ballot Now Software Training Manual 6200-003 62A*. Brief steps are presented below.

- An election database is created in Ballot Now by reading an Election mode MBB from the election and providing the password for the security signing key carried on the eCM token inserted into the Ballot Now PC.
- The election database is opened in Ballot Now and the following printing options are defined from Ballot Printing tab:
 - Verify the check box for Enable Ballot Serial Numbering is deselected.
 - If ballot stubs are used, select the check-box to Include Ballot Stub.
- To print Election ballots for a precinct, the following selections are made in the Print Ballots window:
 - The precinct is selected
 - The Election ballot type is selected
 - The language is selected
 - The political party is selected if the election is a primary election
 - The number of ballots to print is selected

Note: It is imperative to continuously monitor the Print Ballots progress window to ensure completion for the current group of ballots before initiating a print request for another group.

A record of the total number of ballots printed is always available by generating the Ballots Printed by Precinct Report from the Reports menu. This report is used as the official ballot supply record against which the paper ballot supply can be audited. When printing postscript files for a third-party ballot printing vendor, the postscript files must contain the same number of ballots as the number of ballots to be printed in order to preserve the accuracy of this report. Note: Do NOT print one postscript or PDF file for the print vendor to use as a master for printing several ballots.

6.1.2 Pre-Scanning Ballot Now Reports

Before voted ballots are scanned by Ballot Now, the following reports should be generated, printed and retained for the record.

- Election Report

The Election report lists the election name, status of the Ballot Now database, jurisdiction, election date, MBB serial numbers for Ballot Now MBBs, public counter, Ballot Now private counter, and total number of scan batches in the Ballot Now database. Prior to scanning any ballots, the Election Report indicates a public count of zero. RBP - Print the Election Report when initiating and ending scanning sessions spanning multiple periods to provide a secure record of system activity. The last Election Report, which includes a date and time stamp, can be compared to a report generated at session startup confirm zero activity between official scanning sessions.

- Printed Ballots By Precinct Report

The Printed Ballots By Precinct report lists for each printing session, the precinct name and the date, time, user ID, starting serial number, ballot style, language, and number of ballots printed. The report is sorted by precinct name and provides an official record of all ballots printed for the election.

- Scanned Ballots By Precinct Report

The Scanned Ballots By Precinct Report lists the Precinct Name, Batch number of all scanned batches containing ballots from that precinct, and (by batch and summed for the precinct) the total number of ballots Unresolved, Resolved, Written to MBB, and Not Processed. The absence of any data on this report indicates no batches have been scanned and saved.

6.2 Scanning Procedures

Paper ballots are scanned in batches defined in Ballot Now as originating from an Early Voting, Absentee or Election Day source. After scanning each batch, the count of scanned ballot images must be verified against the actual count of ballots in the batch. If there are any discrepancies in the count, the entire batch must be deleted and rescanned. RBP - Print a Resolved Status Report prior to each ballot resolution session and at the completion of all ballot processing. This report provides confirmation of ballots processed and resolved.

Note: Clean scanner heads prior to the start of scanning ballots (see the scanner manufacturer's instructions); monitor the scanned ballot images continuously during scanning for any indication that additional cleaning is required.

Ballot Now flags for resolution ballots containing overvotes, undervotes, write-in votes, damaged contests, and ballots that are completely blank. The scanning and resolution process produces cast vote records that are written to the Ballot Now MBB, but no tabulation occurs in Ballot Now. Ballot Now MBBs are delivered to Tally where they are read and tabulated for results.

Only when all ballots in all scan batches for the complete election have been resolved, and all CVRs have been written to a Ballot Now MBB, can the Ballot Now election database be closed and the database archived. RBP - Delete the database after archiving.

To expedite tabulation of paper ballots in Tally prior to and during the semi-final official canvass, Ballot Now may be set to automatically resolve undervotes and overvotes, but ballots should be inspected beforehand for any potential voter intent issues that may require resolution. Write-in votes must be resolved manually on a vote-by-vote basis.

Note: All such ballots *must* be resolved in Ballot Now before the CVRs can be written to the Ballot Now MBBs. This ballot resolution process can begin as soon as absentee ballot scanning begins in Ballot Now, on or after the seventh business day prior to the election.

In a large jurisdiction, Ballot Now can be run in a closed direct connection network server-client environment. One computer is configured as the Ballot Now server, while additional computers can be configured to function as client resolution stations, thereby expediting the resolution process. Communication between the Ballot Now server and Ballot Now client computers is protected by security certificates through SSL. If more than one Ballot Now server-client closed direct connection network is used, each network must be physically separate from all others.

6.2.1 Certified Write-In Candidate Definitions in Ballot Now

For each contest in the election that has a write-in option(s), the certified candidate write-in names must be added to the Ballot Now election database so that marked write-in options can be assigned to the certified write-in candidate names.

The procedure for adding certified write-in candidate names to the Ballot Now election database is described in the *Define Write-In Names and Aliases* chapter of the *Hart InterCivic Ballot Now Operations Manual 6100-67 Rev. 33-62B*. The steps, in brief, are:

- From the Election menu, select Add Write-in Candidates to display the Add Write-in Candidates window.
- From the Select Contest list box, select the appropriate contest. Write-in candidate names previously defined for that contest appear in the Authorized Write-In Candidates list.
- Define the name of the write-in candidate to add.
- Click the Add button and the new write-in candidate name appears in the Authorized Write-In Candidates list.
- Click the Done button in the Add Write-in Candidates window. The name will now be available for resolving write-ins in that contest.

6.2.2 Post-Election Reports from Ballot Now

The following reports may be exported to a PDF file in Ballot Now, and retained as part of the official election records. See Section 8.12 for additional information on records retention procedures.

- Election report — Election name, Ballot Now state (Opened, Closed), jurisdiction, date, MBB serial number, public counter, Ballot Now private counter, and total number of scan batches
- Election MBBs report — list of MBBs in the Election
- Scan Batch Report — for each page of the ballots in a scan batch, lists whether Ballot Now accepted or rejected the page
- Deleted Batches report — list of deleted batches
- Scan Batch Summary report — summary information for each batch of ballots
- Printed Ballots by Precinct report — for each printing session, the precinct name and the date, time, user ID, starting serial number, ballot type, language, and number of ballots printed; sorted by precinct
- Scanned Ballots by Precinct report — for each precinct, the scan batch IDs and numbers of scanned ballots that are unresolved, resolved, written to the MBB, and not yet processed by BNIP; sorted by precinct
- Scanned Ballots by Batch report — for each scan batch, the scan batch ID, the user ID, date and time associated with the scan batch, and numbers of scanned ballots that are unresolved, resolved, written to the MBB, and not yet processed by BNIP; sorted by scan batch number
- Resolve Status Report — for each scan batch, the scan batch ID, the user ID, date and time associated with the scan batch, number of ballots unresolved, resolved, and not yet processed by BNIP; sorted by scan batch
- Deleted Ballots report — list of deleted ballots
- Certified Write-Ins report — list of certified write-ins entered for all write-in contests
- Ballot Now Audit Log report – list of all auditable activities for the Ballot Now election database

6.3 Paper Ballot Tabulation Procedures

6.3.1 Certified Write-In Candidate Definitions in Tally

For each contest in the election with a write-in option(s), the certified candidate write-in names must be added to the Tally election database so that votes can be assigned to the write-in candidates.

The procedure for adding certified write-in candidate names to the Tally election database is given in the *Write-In Resolution* chapter of the *Hart InterCivic Tally Operations Manual 6100-049 Rev. 43-62C*. The steps, in brief, are:

- From the View menu, select Write-In Resolution to display the Write-In Resolution tab in the Tally window.
- From the Select a Contest with Write-Ins list box, select the contest you want to work with. Write-in candidate names already defined for that contest appear in the Candidates/Aliases list.
- Click the Add button in the Candidates/Aliases pane. The Add Write-In Candidate window appears.
- Define the name of the write-in candidate you want to add, and define the aliases for the name, if any.
- Click the Save button in the Add Write-In Candidate window. The name appears in the Candidates / Aliases list for the contest.

6.3.2 Post Tabulation Report and Shutdown Procedures

Tally reads the CVRs from Ballot Now MBBs as assigned to Early Voting, Absentee, or Election Day source and allows reports to be generated that:

- Keep Absentee votes separate from Early Voting votes and from Election Day votes.
- Combine Absentee and Early Voting votes, and keep Election Day votes separate.
- Combine Absentee, Early Voting, and Election Day votes.

7 Semi-Official Canvass Tabulation and Reporting

In preparation for vote tabulation, the election specific database created and finalized in BOSS is imported via read-only CD into the Tally application and a unique Tally database. This new election-specific database is created before every election and is used solely to read election-specific memory cards (MBBs) containing vote results, accumulate and tabulate those results and produce reports.

7.1 System Startup and Pre-Tabulation Reports

7.1.1 Tally Zero Count Reports

The Cumulative Report and Audit Log Report must be printed from the Tally election database to acquire zero counts before cast vote records from MBBs are read into Tally. The instructions for printing Tally reports are described in the *Hart InterCivic Tally Operations Manual 6100-049 Rev. 43-62C* and the *Hart Voting System Support Procedures Training Manual 6300-006 62C*. This report must be retained as part of the election records.

7.1.2 Rally Zero Count Reports

Before cast vote records from MBBs are read into Rally for transfer to the Tally database via closed direct connection network, the MBB Processing Report and Internal Audit Report must be generated and printed at each Rally station to confirm zero counts. The instructions for printing Rally reports are described in the *Hart InterCivic Rally Operations Manual 6100-114 Rev. 23-62A* and *Tally Training Manual 6300-005 62A*. These reports must be retained as part of the election records.

7.2 Processing Vote Reports

Election results are tabulated and reports are generated in Tally. Instructions for using Tally and Rally are described in the following documents from Hart InterCivic:

- *Tally Operations Manual 6100-049 Rev. 43-62C*
- *Tally Training Manual 6300-005 62A*
- *Rally Operations Manual 6100-114 Rev. 23-62A*

7.2.1 Election Day Precinct Data Tabulation

The MBBs in the precinct JBCs and eScans contain the record of all votes cast on the eSlates and/or captured by the eScan. VBO units contain the paper record equivalent of eSlate CVRs.

After closing the polls, jurisdictions may chose one of two methods for returning the vote record to the jurisdiction for tabulation:

1. Return all JBC and eScan equipment to the jurisdiction on Election Day with the MBBs sealed inside the devices.
2. Remove the MBBs from the devices and seal the MBBs in a secure, tamper-evident sealed container. (This process must be performed under the observation of the entire precinct board.)

After removal, the remaining equipment must also be re-secured with tamper-evident seals under the observation of the entire precinct board. The serial numbers must be recorded on the Chain of Custody document and countersigned by all members of the precinct board, and that record must be included in the precinct records returned on Election Day.

All other precinct records (e.g., VBO units, poll books, unused and spoiled ballots, voted ballots, ballot accounting, zero-tapes, etc) must be returned on Election Day in a secure container. That container must be sealed with a tamper-evident seal under the observation of the entire precinct board, and the serial number must be recorded on the Chain of Custody document. The document must be countersigned by all precinct board members.

All equipment and precinct records must be transported to the jurisdiction in the custody of at least two members of the precinct board. Upon receipt, the jurisdiction must verify the Chain of Custody document and the integrity of all tamper-evident seals (including the serial numbers). See additional information in Section 5.8 of this document, Securing Audit Logs and Backup Records.

If the integrity of any seal has been breached, or there is any indication that the chain of custody has been compromised, the jurisdiction's chief election official shall be notified immediately and the precinct data shall be flagged and all precinct votes shall be subject to a full recount during the official canvass. See additional information in Section 10.5 Compromised Chain of Custody or Security Seal and Section 9 Manual Recount Procedures.

7.2.2 Central Tabulation

As soon as the polls have opened on Election Day, MBBs from Early Voting and MBBs from Ballot Now Absentee or Early Voting paper ballots can be read into Tally. However, this data cannot be tabulated until after the polls have closed on Election Day. After the polls have closed, the MBBs from the Election Day polling sites are read into the Tally system either directly or via Central Count Rally station(s).

CVRs from the MBBs read using a Rally station are transferred to Tally via closed direct connection network in the tabulation room. Accordingly, MBBs read into Rally do not need to be read again into the Tally system. The unique serial number in the MBBs is used to prevent duplicate tabulation if an attempt is made to read an MBB from a Rally station directly into Tally. All results tabulated using the Rally system are unofficial until verified by appropriate auditing procedures.

Tabulation of Election Day Results must continue uninterrupted until the results from all precincts have been tabulated in Tally. Any problems or interruptions in this process must be *immediately reported to the Secretary of State*.

In accordance with California Election Code §15151, tabulated vote results must be reported to the Secretary of State in the manner prescribed by the Secretary of State, at intervals not to exceed two hours following the close of the polls until all precincts have been reported.

7.3 Integration with Jurisdiction Systems and Calvoter

Custom reports for precincts can be generated in Tally and exported from Tally in a delimited text file for use by the jurisdiction and for reporting to the State.

7.4 Reformatting Tally PC and Reinstalling HVS Tally Application

Upon completion of all requisite post-election activities and equipment status preservation requirements for the previous election, and before initiating Tally database generation and/or tabulation actions for the next election, the PC used to run the Tally application will be reformatted.

Following reformatting, the software required to run/support the Tally application will be reinstalled using a trusted build CD provided directly to the jurisdiction by the approved federal testing laboratory or the California Secretary of State.

Software installation and configuration is to be performed only by personnel trained and authorized by Hart InterCivic following the *Tally Computer Setup Procedures for California Users* document.

8 Official Monitoring, Canvass and Post-Election Procedures

8.1 Parallel Monitoring by Secretary of State

The Secretary of State reserves the right to monitor activities before, during, and after the election at any precinct or Registrar of Voters' office, and may, at his or her discretion, conduct a random parallel monitoring test of voting equipment. See Section 5.7.6 above for additional information.

8.2 Election Observer Panel

Each candidate and each side in the case of a ballot measure shall be allowed not more than two observers for each election results board, in accordance with the jurisdiction procedures that must be established and published prior to the election. Observers may not touch or handle the transport media, ballots or voting equipment. All questions must be directed to the elections official in charge of the election results. Any jurisdiction using this voting system shall, prior to such use in each election, file with the California Secretary of State a copy of its Election Observer Panel plan.

8.3 Canvassing Precinct Returns

The Tally Canvass Report provides precinct returns.

For each precinct, the jurisdiction must perform a full-reconciliation of the ballots voted, spoiled or voided against the ballots supplied and the poll book.

During the official canvass, all precincts for which there has been a violation of the chain-of-custody (including breach of a tamper-evident seal) must be subjected to a full recount of the ballots over and above the 1% Manual Recount prescribed by law. For votes cast on the eSlate/JBC, this recount must be performed based on the VBO paper audit trail. For paper ballots cast and counted on the eScan, the recount may be either retabulated on another eScan for which there is a secure chain-of-custody on the device and its MBB, or may be performed by a manual hand count of the paper ballots. See Section 9 for detailed guidance on conducting post-election manual tally.

8.4 Canvassing Absentee Ballots

The Tally Canvass Report provides absentee returns.

Absentee ballots submitted at the polling places on Election Day must be verified for eligibility before they are tabulated. When such ballots are collected at a polling place, they should be labeled as provisional and retained in a secure envelope for delivery to election headquarters. After the jurisdiction determines the eligibility of the ballots, ballots can be scanned into Ballot Now or an eScan and CVRs can be written to the MBB for delivery to Tally. A separate unused MBB for the election must be used in Ballot Now to collect the CVRs from such ballots. Also, ballots can be scanned in a separate batch or together with another batch per local procedures.

8.5 Canvassing eSlate Provisional Ballots

Provisional ballots cast on the eSlate DRE shall be verified and tabulated in accordance with California Election Code §14310. By default, eSlate provisional ballots are either included or excluded directly in the Tally system. Included provisional ballots are tabulated and reported with standard Tally results.

After the jurisdiction determines the eligibility of each voter who cast a provisional eSlate ballot, those ballots eligible for counting are processed for inclusion in Tally's tabulated vote totals using one of two methods.

1. Using the Ballot Code from the provisional ballot stub, the Tally operator locates the ballot in the list on the Provisional Ballot screen and then marks the ballot as "Included." The Tally operator must also select the precinct that was determined to be the precinct in which the voter was eligible to vote. Based on that precinct assignment, Tally automatically determines and records the vote choices for contests in which the voter was entitled to vote and reports choices in all invalid contests as undervotes.

2. An import file, including all accepted ballot codes and precinct numbers, can be created according to specifications as described in the *Hart InterCivic Tally Operations Manual 6100-049 Rev. 43-62C* and *Tally Training Manual 6300-005 62A*.

Provisional paper ballots voted at an eScan polling place should not be scanned in the eScan, but should be labeled as provisional and inserted into the eScan ballot box's Emergency Ballot Slot (on the side of the eScan). After the jurisdiction determines the eligibility of the paper provisional ballots, those ballots can be scanned into Ballot Now or an eScan and the CVRs will be written to an MBB for delivery to Tally.

Detailed instructions for processing provisional ballots in Tally are provided in the *Hart InterCivic Tally Operations Manual 6100-049 Rev. 43-62C* and *Tally Training Manual 6300-005 62A*.

8.6 Canvassing Write-In Votes

The names of certified write-in candidates for each contest may be entered into Tally prior to Election Day.

On eSlates, voter submissions of write-in candidate names are recorded as text in the Cast Vote Records written to the MBB, and to the eSlate and JBC flash memories. When MBBs containing write-in text strings are read into Tally, the application automatically assigns the write-in votes to any exactly matching certified write-in names that have been defined in Tally.

On eScans, voter submissions of write-in candidate names on paper ballots are recorded as images in the Cast Vote Records written to the MBB and to the eScan flash memory. The Tally operator uses the Resolve Images function in Tally's Write-In Resolution window to view images of write-ins from the paper ballots so that the corresponding certified write-in name can be assigned to each image.

When canvassing paper ballots scanned by Ballot Now, contests with write-in names must be resolved using Tally. Tally automatically assigns the certified write-ins from the Ballot Now MBBs to any exactly matching certified write-in definitions set up in Tally. The jurisdiction must be sure to resolve any remaining unresolved write-in votes in Tally *after* all provisional ballots and remaining paper ballots are processed in the canvass.

Detailed instructions for processing write-in votes in Tally, including the creation aliases for write-in candidate names, are provided in the *Hart InterCivic Tally Operations Manual 6100-049 Rev. 43-62C* and *Tally Training Manual 6300-005 62A*. The procedures for resolving write-in votes in Ballot Now are described in the *Hart InterCivic Ballot Now Operations Manual 6100-067 33-62B* and the *Ballot Now Software Training Manual 6300-003 62A*.

8.7 Auditing Election Returns at the Jurisdiction Level

Just as an audit of election activities and data is to be performed at the precinct level, similar audit actions should be accomplished at the jurisdiction level. Sub-sections that follow below outline various actions that are part of the total jurisdiction level audit. All of these actions should be integrated with a top-line verification of total returns conducted as follows:

For Precinct Count Operations:

- Total the number of Election Day ballots cast in the precincts on the JBC and eScan devices by adding the number of ballots cast reported by each precinct. (Use SERVO to backup JBC or eScan devices used for ED precinct voting but are not included in precinct reports of total ballots cast. Caution: Confirm the "Reset" check box in SERVO is **not** enabled before performing a backup.)
- Use SERVO to backup any eScan devices used for Central Count of Absentee or other paper ballots, if records of ballots cast on these devices are not complete. Caution: Confirm the "Reset" check box in SERVO is **not** enabled before performing a backup.
- Generate an Election Report from Ballot Now that encompasses all Absentee or other paper ballots processed and reported through Ballot Now.

- Total the number of paper ballots processed by Central Count by adding the ballots cast processed through the eScan and those processed through Ballot Now.
- Add the total Election Day ballots cast to the total Central Count paper ballots cast to obtain the total ballots cast for the election.
- Compare this audit total with the number of total ballots cast tabulated by Tally.
- Resolve any discrepancies (such as including or excluding provisional ballots, as appropriate).

For Central Count Only Operations:

- Use SERVO to backup all eScan devices used to count paper ballots, if records of ballots cast on these devices are not complete. Caution: Confirm the "Reset" check box in SERVO is **not** enabled before performing a backup.
- Generate Election Report(s) from Ballot Now to obtain the total paper ballots processed and reported through Ballot Now.
- Total the number of paper ballots processed by Central Count by adding the ballots cast processed through the eScan and those processed through Ballot Now.
- Compare to the total paper ballots processed by Central Count with the number of total ballots cast tabulated by Tally.
- Resolve any discrepancies (such as including or excluding provisional ballots, as appropriate).

If required, use the data available in SERVO and BN reports, as well as Recovery and/or Recount MBBs to trace specific discrepancies to the precinct level and then use precinct reports to resolve these discrepancies.

8.8 1% Manual Recount Procedures

Note: Elections officials must comply with requirements set forth by the Secretary of State in the document entitled "Post-Election Manual Tally Requirements" and any successor document.

In accordance with California Election Code §15360, for the purpose of validating the accuracy of the computer count, within fifteen days after every election, a public manual recount of the ballots cast in at least one percent of the precincts, chosen at random, shall be conducted as to all candidates and ballot measures voted on in each of the precincts. If the random selection of precincts results in an office or ballot measure not being manually recounted, as many additional precincts as necessary shall be selected and manually recounted as to any office or ballot measure not recounted in the original sample.

The date and time for selection of random precincts should be publicly noticed prior to the election, and should be observable by interested parties, based on established jurisdiction procedures. Furthermore, the method for selection of the precincts must be observably random.

The actual manual recount shall be conducted in accordance with California Election Code §15360, §19253 and the prevailing Uniform Vote Counting Standards established by the Secretary of State. The recount of votes cast on paper ballots shall be based on the actual paper ballots. The recount of votes cast on eSlates shall be based on the VBO paper audit trail.

If there is a discrepancy between the automated tally and the manual recount tally, the record from the paper ballots or the VBO paper audit trails shall prevail. (California Election Code §19253)

(Paragraph regarding "Escalation of audit sampling when significant discrepancies exist between electronic and manual audit vote results" has been deleted per the Secretary's revision of use requirements on December 6, 2007.)

The Secretary of State shall establish additional post-election manual count auditing requirements, including: _____

- Increased manual count sample sizes for close races, based on an adjustable sample model, where the size of the initial random sample depends on a number of factors, including the apparent margin of victory, the number of precincts, the number of ballots cast in each precinct, and a desired confidence level that the winner of the election has been called correctly. In establishing sampling requirements for close races, the Secretary of State may impose a specific sampling threshold for a given vote differential or percentage of the margin of victory, taking into account the number of electors and the number and size of precincts in the race.
- Escalation requirements for expanding the manual count to additional precincts when discrepancies are found
- Uniform procedures to increase transparency and effectiveness of post-election manual count audits

8.9 Counting Ballots Recorded on VBO Paper Audit Trail

Note: Poll workers are not permitted to have access to any VBO audit records from their own precinct, nor may they participate in any audits or recounts involving VBO audit records from their own precinct. Poll workers may participate in audits involving VBO audit records from a precinct other than the one in which they were a poll worker.

Prior to and/or during audits or recounts involving VBO audit records, voting data printed on the VBO paper verification media should be visually examined closely for evidence of abnormal voting patterns; for example, a number of consecutive identical ballots should be considered abnormal. If any abnormalities are discovered during this examination, they should be reported immediately to the jurisdiction's chief election official, and the affected audit materials should be sealed, marked for thorough examination and secured for restricted access until such examination can be accomplished.

Additionally, if barcodes are being scanned electronically or counted to capture the number of votes or ballots cast, care must be taken not to inadvertently include "extra barcodes" (i.e. those not accompanied by voter verified ballot selection text) that may have been printed due to a temporary interruption of communication between the VBO and the voting device. The presence of such "extra barcodes" should serve as an indication that other election records (such as polling place equipment malfunction or abnormal occurrence logs) should be reviewed to identify any likely cause(s) for the printing of extraneous data.

8.10 Handling Ballot Exceptions

In general, all ballot exceptions shall be resolved in accordance with the prevailing Uniform Vote Counting Standards established by the Secretary of State.

8.10.1 Undervotes

The eScans can be set in BOSS to require the voter's approval for scanning a blank ballot or a ballot with undervotes. In such a case, if the voter scans a ballot with undervotes, the ballot is rejected and a message appears on the eScan screen explaining what is wrong with the ballot. The voter can:

- 1) Remove the ballot from the feeder tray, make changes to the ballot, then re-scan the ballot, or
- 2) Press the command button on the eScan screen to cast the ballot as-is.

Undervotes on eSlates are highlighted on the Ballot Summary page of the eSlate screen and the VBO printout of a Ballot Summary page as "No Selection". The voter can choose to cast a ballot with undervotes.

On ballots scanned by Ballot Now, undervoted contests must be resolved. The procedure for resolving undervoted contests in Ballot Now are described in the *Hart InterCivic Ballot Now Operations Manual 6100-067 33-62B* and *Ballot Now Software Training Manual 6300-003 62A*.

Undervote counts should be included in Tally reports.

8.10.2 Overvotes

Overvoting is not possible on the eSlate, as the DRE will not permit a voter to mark more than the number of valid choices for a given contest.

The eScans must be set in BOSS to initially reject ballots containing overvotes. In such instances, eScan will present a message to the voter advising him/her of the overvote(s). The voter may choose to either (a) cast the ballot as voted, or (b) remove the ballot and receive a new blank ballot from the poll worker to vote. In the latter case, the poll workers must spoil the original incorrect ballot and supply the voter with a new blank ballot, in accordance with California Election Code §14288 and §14290.

If the eScan is programmed in BOSS so that poll worker assistance is required to cast an overvoted ballot, the poll worker must inform the voter of the overvote, explain the consequences of casting an overvoted ballot and explain the voter's options to cast the ballot as voted or to spoil the overvoted ballot, vote a new ballot and rescan the new ballot. The poll worker shall then take appropriate action to cast or spoil the ballot based on the voter's preference.

In Ballot Now, during review of scanned ballots, all overvoted contests shall be accepted and resolved as overvotes, unless a valid voter choice can be determined based on voter intent in accordance with the prevailing Uniform Vote Counting Standards established by the Secretary of State.

8.10.3 Torn and Damaged Ballots

Ballots that are torn or otherwise damaged so that they cannot be read by either Ballot Now or the eScan shall be replaced with ballots that have been marked by authorized election officials to duplicate the voter's choices, in accordance with California Election Code §15210.

8.10.4 Audit Discrepancies

Apply the procedures in Sections 8.7 and 8.8 above that address discrepancies encountered during the 1% Manual Recount and any recount involving the VBO audit trail.

8.11 Post Election Logic and Accuracy Testing

Instructions for performing the logic and accuracy testing for the eSlates and eScans are described in the *Hart InterCivic Tally Training Manual 6300-005 62A*.

Due to the ballot imaging technology employed in the eScan and Ballot Now, a traditional post election logic and accuracy test is not required. Nor is one required for the eSlate/JBCs, since all ballots cast are printed and voter-verified on the VBO paper audit trail.

8.12 Final Reporting of Official Canvass

The data for final reporting of the Official Canvass is derived from Tally. Before the data for the election is considered final in Tally:

- All MBBs for the election must have been read into Tally.
- All MBB data must have been tabulated by Tally.
- All provisional ballots must be included or excluded.
- All write-in votes must be assigned or rejected.
- The Canvass Report can then be generated to serve as the Official Canvass for the election from the Canvass Report item in the Reporting tab.
- The Canvass Report must be printed from Tally. Use the "Total" canvass type to include all Absentee, Early, and Election Day results.

- The Tally Custom Report Wizard can be used to generate subsets of the Canvass Report.
- The Tally Export Wizard can also be used to export results to a delimited text file.

8.13 Backup and Retention of Election Material

At the close of the election, all data from the election is to be archived. Data is archived by using the CD-writing software on the respective Hart Voting System PC to transfer data to a read-only medium (CD-R or DVD-R). It is recommended that at least two copies of all archive materials be created with each stored in a separate, secure location.

In those instances where the size of a single data file (for example a Ballot Now database) exceeds the capacity of a single DVD-R storage media, such files may be archived using the Standard Windows Navigation method described below. Saving the data in a password protected form on an external USB storage device that can be secured provides safeguards at least the equivalent of those afforded the CD or DVD media. Other means of storing large HVS data files (e.g. electromagnetic tape) must be approved on a case-by-case basis by Hart and the California Secretary of State, but in no case will alternate means include exposing the respective HVS computer directly or indirectly to the Internet or other unauthorized network.

8.13.1 How to Back Up Data

Backing up data can be performed in one of two ways:

1. Standard Windows Navigation (Preferred Method)

After consulting the list of data to be backed up in Section 8.13.2 below, use standard Windows navigation to locate appropriate folders for backup and copy them to a user-defined directory on the PC. After making a backup folder, copy to a CD-R or DVD.

Database and file backups should always be saved to a directory (folder) named for the election with the time and date, and the status of the database. By using standard Windows navigation and copying the entire original folder, all information that uniquely identifies that particular database is preserved.

2. "Backup" or "Archive" Buttons in the User Interface

BOSS, Tally, and Rally include "Backup" or "Archive" functions within the user interface. An Administrator-level user may use this function to back up the database and configuration files to a user-defined directory on the PC.

Note that these "Backup" and "Archive" functions save only the original database files, and not the uniquely identified original folder name, to a new folder location, therefore identifying information for databases will be lost. It is imperative for the user to name new folders with precision. Database and file backups should always be saved to a directory (folder) named for the election with the time, date, and the status of the database.

8.13.1.1 Naming Conventions for Folders and CD-R or DVD-R Files

- Name each application's backup folder with the application, election, type of election, and date of election. (Example: BOSSgeneral_11.04.08)
- Name each electronic report file, including all audit logs, carefully to prevent unintentional destruction of data.
- Name the CD-R or DVD-R within the character limits for the disc creator application. The jurisdiction, election, and election date should be included. (Example: Smith_gen11.4.08)
- Label both the jacket and the CD or DVD media clearly.

8.13.1.2 Archive File Organization

To organize database backups and storage space, create an ARCHIVE template folder on each HVS computer within **My Documents** to use for every election cycle. Once this archive folder template is created, place a copy named for the current election on the Desktop when creating a full election archive. This folder template should include the following subfolders:

8.13.1.2.1 BOSS (Election Name/Date) Folder

- ◆ Create subfolders for the “Open,” “Generated with Cards Written,” and “Finalized” stages of the database
- ◆ Create subfolders for text exports, translation text/audio exports, and all associated report PDF files
- ◆ Create a subfolder for all audit log reports

8.13.1.2.2 Tally (Election Name/Date) Folder

- ◆ Create subfolders for each database, e.g., LAT 1, LAT 2, LAT 3, and OFFICIAL
- ◆ Create subfolders for all associated report PDF files
- ◆ Create a subfolder for all audit log reports

8.13.1.2.3 Ballot Now (Election Name/Date) Folder

- ◆ Create subfolders for each Test and Election mode database using the election ID number. Test mode election ID is followed by a “T” (e.g., 001T)
- ◆ Create subfolders for all associated report PDF files
- ◆ Create a subfolder for all audit log reports

8.13.1.2.4 SERVO (Election Name/Date) Folder

- ◆ Create sub folders for the SERVO database
- ◆ Create sub-folders for all associated report PDF files
- ◆ Create a subfolder for all audit log reports

8.13.1.2.5 Rally (Election Name/Date) Folder

- ◆ Create sub folders for the each database archive (e.g., First, Second, Final).
- ◆ Create sub-folders for all associated report PDF files
- ◆ Create a subfolder for all audit log reports.

8.13.2 When to Back Up Data

In addition to archiving data at the close of the election, there may be instances in which it would be very beneficial to have backed up election data at various points during the execution of pre- or post-election activities. Some lists below, therefore, include suggested election data backup points other than just the final archiving of data at the end of the election. Mid-course backup files can normally be deleted or overwritten as subsequent stages of the election process are completed.

8.13.2.1 *.eCM file Backup

- Immediately after creating eCMs for the election.

8.13.2.2 BOSS Database and Audit Log Backup

- Immediately before exporting text for translation
- After importing translated text and audio

- After completing all proofreading and before generating the ballot
- After generating the ballot and writing media, but before finalizing the database
- After finalizing the database

8.13.2.3 Ballot Now Database and Audit Log Backup

Backup the BN database after the following major tasks are completed, or after each day of activity if the activity spans more than one day:

- Printing ballots
- Creating ballot files for third-party printing
- Scanning ballots
- Resolving ballots
- Saving cast vote records
- After closing the election in Ballot Now at the end of the election

8.13.2.4 Tally Database and Audit Log Backup

- After each instance of creating printed and exported reports for public use (e.g., media outlets)
- After processing absentee by-mail MBBs on Election Day
- After processing Early Voting MBBs
- After processing absentee by-mail late mail MBBs after Election Day (if allowed)
- Before resolving write-in votes
- Before resolving provisional ballots
- Before entering any manual vote adjustments
- Before finalizing
- After finalizing
- Immediately after Canvassing

8.13.2.5 Rally Database and Audit Log Backup

- After processing all MBBs and printing and exporting final reports
- Before resetting the Rally database (including before resetting the Rally database as an emergency procedure)
- Before shutting down the Rally computer

8.13.2.6 SERVO and Audit Log Backup

- After inventorying equipment with SERVO
- After backing up equipment post-election
- After combining events into one "master" event for an election on the "master" SERVO PC, if applicable.

8.13.2.7 JBC, eSlate, eScan Backup

The Cast Vote Records and the audit log data from all eSlates, JBC, and eScans used in the election are downloaded into a database using the SERVO application. Separate "Events" are created in SERVO for downloading Absentee, Early, and Election Day CVRs and audit logs. Caution: Confirm the "Reset" check box in SERVO is **not** enabled before performing a backup. Backup and Reset must be performed as separate and distinct operations.

8.13.3 Data Files to be Backed Up

Detailed file names and data paths are provided in the respective Hart InterCivic Training or Operations Manuals to assist in accomplishing a complete backup of election data:

- *Ballot Origination Software System Training Manual 6300-002 Rev. 62C*
- *Ballot Now Operations Manual 6300-003 Rev. 62C*

- *Tally Operations Manual 6300-005 Rev. 62C*
- *SERVO Operations Manual 6100-102 Rev. 42-62B*

The following is a checklist of folders and additional files recommended for a complete election backup.

8.13.3.1 eCM Manager

- *.eCM file created with the Save File function.
 - ♦ After selecting Save File, use standard Windows navigation to navigate to a folder named for the election and to name the *.eCM file.

8.13.3.2 BOSS

- Numbered folder with BossData.db and BossData.cfg files
 - ♦ C:\boss\Database\YearMonthDay-HourMinuteSecond (12 digits)
- BOSS [Election Name] Reports folder on the Desktop containing a PDF copy of all reports, including the most current Audit Log.

8.13.3.3 Ballot Now Test

- Numbered folder with the election I.D. followed by a "T" (e.g., 023T)
 - ♦ C:\Program Files\Hart Intercivic\Ballot Now\<nnnT> (three-digit I.D.+T)
- BNsecurity.db file in the "Ballot Now" folder
- BNsecurity.cfg files in the "Ballot Now" folder
- BNsecurity.log files in the "Ballot Now" folder
- Ballot Now [Election Name] Reports folder on the Desktop containing a PDF copy of all reports, including the most current Election Database Audit Log and Security Database Audit Log.

8.13.3.4 Ballot Now Election

- Numbered folder with the election I.D. (e.g., 023)
 - ♦ C:\Program Files\Hart Intercivic\Ballot Now\<nnn> (three-digit I.D.)
- BNsecurity.db file in the "Ballot Now" folder
- BNsecurity.cfg files in the "Ballot Now" folder
- BNsecurity.log files in the "Ballot Now" folder
- Ballot Now [Election Name] Reports folder on the Desktop containing a PDF copy of all reports, including the most current Election Database Audit Log and Security Database Audit Log.

8.13.3.5 Tally Test

- Numbered folder with the TallyData.db, TallyData.cfg and TallyData.log files
 - ♦ C:\Program Files\Hart Intercivic\Tally\Database\YearMonthDay-HourMinuteSecond (12 digits)
- Tally [Election Name] Test Reports folder on the Desktop containing a PDF copy of all reports, including the most current Audit Log.

8.13.3.6 Tally Election

- Numbered folder with the TallyData.db, TallyData.cfg and TallyData.log files
 - ♦ C:\Program Files\Hart Intercivic\Tally\Database\YearMonthDay-HourMinuteSecond (12 digits)
- Tally [Election Name] Reports folder on the Desktop containing a PDF copy of all reports, including the most current Audit Log.

8.13.3.7 Rally

- "Database" folder with the Mbbtrans.db and Mbbtrans.cfg files

- ♦ C:\Program Files\Hart Intercivic\Rally\Database
- Rally [Election Name] Reports folder on the Desktop containing a PDF copy of all reports, including the most current Audit Log.

8.13.3.8 SERVO

- "Database" folder with the ServoData.db and ServoData.cfg files.
 - ♦ C:\Program Files\Hart InterCivic\SERVO\Database
- SERVO [Election Name] Reports folder on the Desktop containing a PDF copy of all reports, including the most current Audit Log.

8.13.4 Backing up to CD-R or DVD-R

In order to back up to a CD-R or DVD-R, use the CD/DVD creator application supplied with each Hart InterCivic computer. Refer to the application's Help file for specific steps on creating a Data CD or DVD.

Use only CD-R or DVD-R discs, which can be written only once. Unlike "-RW" discs, which can be written and re-written multiple times, "-R" discs cannot be overwritten, making them more secure for purposes of archiving data.

After creating a CD or DVD, always navigate to the Compact Disc drive (usually D:/) and verify that the disc contains all of the data intended for backup. Label the disc with the Jurisdiction, Election Title, Date, and Hart Voting System software application name. It is recommended that at least two copies of all archive materials be created with each stored in a separate, secure location.

As indicated in Section 8.12 above, other media may be used to backup files that are too large to record on CD-R or DVD-R discs, provided that appropriate measures are taken to secure the records.

8.13.5 Retention

All reports printed from JBCs, VBOs and eScans shall be retained in a secure location.

Master copies of all data identified above in this section shall be retained in a secure location designated by the local election official and separate from the location of working copies:

- For the retention period as required by law
- By order of a court or directive of the Secretary of State

After certification of the election results, any changes to the central tabulating software or the ballot results sets shall be completely documented in the central system internal audit log. Upon certification of the election results, California Election Code §17300 - §17306 and §17501 - §17506 apply to the handling, security and disposition of elections materials, including unused materials.

8.13.5.1 Database Backup

Retain all CDs (read-only compact discs) containing archived election databases, reports and audit logs from the BOSS, Ballot Now, Tally, Rally, and SERVO applications in a secure location. Backing up database procedures are described in Section 8.13.1 – 8.13.4 above.

8.13.5.2 Record Logs from Polling Places

All record logs from pre-election equipment preparation and from polling places shall be retained in a secure location. Record logs include:

- Ballot Seal and Certificate Logs
- Device Serial Number Logs
- Canceled Booth Log (JBC/eSlate only)
- Spoiled Ballot Log
- Replacement Paper Ballots Log & Envelope (eScan only)
- Help Desk Call Log
- Reconciliation Logs

8.13.5.3 JBC Reports

JBC reports print out on the JBC printer. For each JBC used in the election, the following reports must be retained as part of the election record:

- Device Power Up Report
- Election Identification Report
- Network Configuration Report
- Zero Tape Report
- Polls Open Report
- Access Code Report
- Daily Summary (early voting only)
- Cumulative Summary (early voting only)
- Polls Suspended Report (early voting only)
- Polls Suspended Daily Detail Report (early voting only)
- Polls Closed Report
- Tally Report
- Write In Report

If printed, the following reports should be retained as part of the election record:

- Access Code Status Report
- Aborted Access Codes
- Recovered Access Codes

Note: Although neither the JBC nor the eScan have the capability to print an audit log in the polling place, audit log information is available via the *Device Audit Log* report once the devices are backed up using SERVO at Election Headquarters.

8.13.5.4 eScan Reports

eScan reports print out on the eScan printer. For each eScan used in the election, the following reports must be retained as part of the election record:

- Device Power Up Report
- Election Identification Report
- Network Configuration Report
- Zero Tape Report
- Polls Open Report
- Daily Summary (early voting only)
- Cumulative Summary (early voting only)
- Polls Suspended Report (early voting only)
- Polls Suspended Daily Detail Report (early voting only)
- Polls Closed Report
- Tally Report
- Write In Report

Note: Although neither the JBC nor the eScan have the capability to print an audit log in the polling place, audit log information is available via the *Device Audit Log* report once the devices are backed up using SERVO at Election Headquarters.

8.13.5.5 VBO Paper Audit Trail

The VBO printer produces administrative and system operating reports in addition to the voter verified ballot selection data (which duplicates each voter's CVR). The thermal paper roll upon which this information is printed must be retained as part of the election record and should be handled with the same security considerations and procedures as voted ballots.

The VBO printout contains the following information:

- VBO Power Up Report
- Test Page Report

- VBO Connection Report
- VBO Polls Opened Report
- VBO Polls Closed Report
- VBO Ballot Verification Page Report (representing one page of a CVR)

VBO paper rolls, when stored under normal filing conditions not exposed to direct sunlight, have a shelf life of 10 years after being imaged. For additional information on paper storage specifications, see *Hart Voting System Support Procedures Training Manual 6300-006 62C*.

8.14 Records of Voting System Equipment Failure

If a voting device experiences a fatal error from which it cannot recover gracefully (i.e. the error is not handled through the device's internal error handling procedures with or without user input), such that the device must be rebooted or the device reboots itself to restore operation, the following actions must be taken:

- The chief election official of the jurisdiction must be notified immediately.
- The equipment must be removed from service immediately and replaced as soon as possible.
- Any votes cast on the device prior to its removal from service must be subject to a 100% manual tally, by the process described in Elections Code §15360, over and above the normal manual tally conducted during the official canvass, as defined in Elections Code § 336.5. Notice to the public of this manual tally may be combined with the notice required by any other manual tally required in this order or by Elections Code §15360.
- Any memory card containing data from that device must be secured and retained for the full election retention period.
- A backup of all device Cast Vote Records and system audit logs will be recorded to write-once media and retained securely for the full election retention period.
- The vendor or jurisdiction shall provide an analysis of the cause of the failure.
- Upon request by the Secretary of State, the vendor or jurisdiction shall retain the device for a reasonable period of time to permit forensic analysis.
- All device software and firmware must be reinstalled from a read-only version of the approved firmware and software supplied directly by the approved federal testing laboratory or the Secretary of State before the equipment is placed back into service.

9 Manual Recount Procedures

9.1 Request for Recount and Conduct of Recount

A request for a recount and the conduct of the recount shall be made in accordance with Division 15, Chapter 9 of the California Election Code.

9.2 Recount Methods

Post election audits will be accomplished by jurisdiction personnel.

California Election Code §15627 specifies that the person who requests the recount may specify whether the recount shall be conducted manually, or by means of the voting system used originally, or both. For this Hart InterCivic system, there are three possible methods for conducting the recount in California. The requestor must specify which method is to be used:

- **Fully Automated** – A Recount MBB is generated by SERVO that contains all the Cast Vote Records (CVRs) for every eScan and eSlate used in the election. A Recovery MBB is generated by Ballot Now that contains the CVRs for all ballots recorded by Ballot Now. The vote results are re-tabulated from these new MBBs.
- **Partially Automated** – Paper Ballots originally scanned through eScans are re-scanned through an eScan with an unused MBB from the Election. Paper Ballots originally scanned through Ballot Now are re-scanned in Ballot Now with a new MBB. For votes cast on eSlates, the CVRs for each eSlate are printed from SERVO and manually tabulated.
- **Manual** – All paper ballots are manually tabulated. The votes cast on eSlates are manually tabulated from the eSlate VBO paper audit trails.

For recount of contests that span multiple jurisdictions using this voting system, each jurisdiction must use the same method for conducting the recount of that contest.

Poll workers are not permitted to have access to any VBO audit records from their own precinct, nor may they participate in any audits or recounts involving VBO audit records from their own precinct. Poll workers may participate in audits involving VBO audit records from a precinct other than the one in which they were a poll worker.

Elections officials must comply with requirements set forth by the Secretary of State in the document entitled "Post-Election Manual Tally Requirements" and any successor document.

9.3 Observer Panels

Each candidate in a challenged contest and, in the case of a ballot measure, each side, shall be allowed not more than two observers for each recount board. No observer may touch or handle the transport media or any ballots. All questions must be directed to the elections official in charge of the recount.

9.4 Ballot Resolution

Ballot resolution, including resolution of write-ins, in both Ballot Now and Tally, must be conducted in such a manner that a complete observer panel has full view of the ballot image and the actual resolution decisions made for each ballot.

All ballot resolution decisions must conform to the prevailing Uniform Vote Counting Standards established by the Secretary of State.

If there is a discrepancy between the original tally and the recount tally, the recount tally shall prevail. See also Section 8.8.4 Audit Discrepancies

9.5 Hours of Operation

Prior to the beginning of the recount, all parties will be notified of the hours of operation.

9.6 Ballot Supervision/Breaks

At least two people will attend ballots at all times during the recount, including breaks and lunch periods.

Recount boards will be permitted break periods in the morning and afternoon, in addition to a lunch break. They will not stop for a break or for lunch while recounting a precinct.

10 Security

10.1 Physical Security of System and Components

Chain of custody is a written record that documents the identification and status of equipment, material, data, information, etc., and the persons(s) to whom the security and control of the specified item(s) has been entrusted. Responsibility for security and control of items should only be entrusted to a person(s) authorized by appropriate authority to hold the respective items(s). Chain of custody programs used by election officials should be governed by the following policies:

a. Responsibility for security and control of items should only be entrusted to a person(s) authorized by appropriate authority to hold the respective item(s).

b. Local election officials should adopt appropriate methods to achieve an effective Chain of Custody program that meets their specific needs. This may involve employing different methods of document tracking such as the use of barcodes and scanners. Chain of Custody RBP includes the following:

- Provide space on the document to verify tamper evident seal integrity and serial numbers.
- Show documented confirmation with at least two dated signatures.

10.1.1 Controlled Access to Election Computers

The Election Management computers and servers should be kept in a room for which access is physically limited to only authorized personnel. The room should be secure at all times. Access to the computer room should be logged and monitored. If the room cannot be secured during non-work hours such that any off-hours access to the room is readily detectable, the access logs for the room should be regularly reviewed (at least monthly) for unauthorized entry.

RBP - Lock computers to a desk, table, or stanchion. The housing of a computer should be locked to prevent access to the inside of the computer.

RBP - Implement the two-person rule where at no time shall only one person have sole custody of ballots or MBBs or, be alone with Hart Election Management System computer(s).

Note: Elections officials must develop appropriate security procedures for use when representatives of qualified political parties and bona fide associations of citizens and media associations, pursuant to their rights under Elections Code §15004, check and review the preparation and operation of vote tabulating devices and attend any or all phases of the election. The security procedures must permit representatives to observe at a legible distance the contents of the display on the vote tabulating computer or device. This requirement may be satisfied by positioning an additional display monitor or monitors in a manner that allows the representatives to read the contents displayed on the vote tabulating computer or device while also observing the vote tabulating computer or device and any person or persons operating the vote tabulating computer or device.

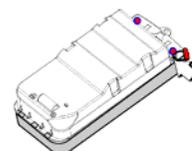
10.1.2 eCMs (eSlate Cryptographic Modules)

eCMs written for the election should be kept in a secure location that will prevent unauthorized access to the eCMs. Removal and use of the eCMs should be logged, witnessed and monitored.

10.1.3 Voting Devices Used In the Polling Place

10.1.3.1 Equipment Delivered to Polling Places

Once prepared for Election Day, JBCs, eSlates, VBOs and eScans shall be secured with one or more serialized, tamper-evident seals such that the product case cannot be opened undetected for access to the internal parts/components of the device. The MBB compartment on each JBC and the eScan must be



sealed and the serial number logged. The VBO must be secured to the voting booth with a seal and the serial number logged. See Sections 4.8.2.1 JBC and eScan Preparation, 4.8.2.2 VBO Preparation, and 4.8.2.3 eSlate and Booth Preparation.

Jurisdictions must secure all voting system components in one or more uniquely serialized, tamper-evident container(s) prior to release to the custody of an Inspector, other poll worker, drayage company or other intermediary, or before jurisdiction personnel deliver them to a secure polling place or secure satellite distribution facility. Transportation of voting system components to the custody of an Inspector, other poll worker, drayage company or other intermediary, secure polling place, or secure satellite distribution facility shall not occur earlier than 10 calendar days prior to Election Day.

Approved secure tamper-evident containers include:

- A uniquely serialized, sealed banker's bag
- A zippered nylon or canvass bag or case on which the zipper(s) that prevent access to the voting system component(s) inside are kept closed by a uniquely serialized, tamper-evident lock; or
- A hard lid that blocks access to all doors, ports or other points of access to the inside of the voting system component(s) and that is held in place by a latch or latches closed with a uniquely serialized, tamper-evident lock or locks.

Note: Jurisdictions using more than one eSlate with a JBC must permanently assign each precinct a set of JBC and eSlate devices, identified by serial number, for use in all elections, taking into account equipment replacement needs and precinct consolidations.

If the JBCs or eScans are shipped with the MBB inserted, the compartment containing the MBB must be secured with a serialized, tamper-evident seal immediately after insertion. If the MBBs are shipped to the precinct separately (not sealed inside a JBC or eScan), the MBB must be shipped within a secure container that is either serialized and tamper-evident, or secured with a serialized, tamper-evident seal. Once the MBB is inserted into the device on Election Day, the MBB compartment must be sealed with a serialized, tamper-evident seal and appropriately logged in polling place documentation.



The integrity of all seals designated by the jurisdiction should be inspected, verified, and logged by multiple members of the precinct board prior to opening polls. Additionally, seals should be inspected and verified on a regular basis throughout Election Day; just after closing the polls; and upon receipt of the equipment at the jurisdiction's central headquarters.

If a breach of a security seal is discovered prior to the opening of the polls on Election Day, the machine should be removed from service and replaced in accordance with these procedures, as determined by the chief election official of the jurisdiction. If a breach of a security seal is discovered after the opening of the polls on Election Day and votes have been cast on that device, the device should be taken out of service and replaced, if possible. During the canvass, all ballots scanned or voted on that device must be manually counted and tabulated, in addition to the 1% manual tally required by law.

If voting equipment and supplies are delivered directly to a polling place in advance of the election, the delivery should take place under the observation of a member of the jurisdiction's elections staff.

If voting equipment and supplies are given to a poll inspector in advance of an election, that poll inspector must have had training and instruction on securing the equipment, and he/she is required to be sworn in as an election officer or poll inspector.

- Poll inspectors should be deputized to act as agents of the Registrar of Voters, taking an oath of office from Article 20, Sec. 3a of the Constitution of the state of California, and should be sworn to uphold the laws of the United States and the State of California.

- After taking the oath, when the voting supplies and equipment are given to the poll inspector, each inspector must sign a receipt with the date, precinct number, number of ballots, identification or serial number of equipment, and other information required to track equipment and supplies.

At the polling place, the equipment must be locked in a secure location that has received prior approval by the election official or deputy, and is appropriately configured to prevent unauthorized access to the equipment.

10.1.3.2 Equipment Disposition After Close of the Polls (Election Day)

Jurisdictions have two options for closing the polls and returning equipment and supplies:

- a) All equipment and supplies are returned to the jurisdiction or a designated satellite location on Election Night, or
- b) The MBBs, together with the other precinct records and supplies are returned on election night, while voting equipment is left secured at the polling place for later pickup and return to the jurisdiction.
- Note: See Section 10.1.3.1 above regarding transport container requirements.

Whenever voting equipment and/or supplies are removed from the polling place, the equipment must be transported in the joint custody of two or more poll inspectors at all times. The MBBs must be left sealed in the equipment with the serialized, tamper-evident seal intact. Immediately upon return of the equipment, the jurisdiction must verify the integrity of all seals before they are broken and the MBB is removed, read, and tabulated.

If equipment is left in the polling place for later pick-up, multiple poll workers must verify the integrity of the tamper evident seals before the tamper-evident seal is broken and the MBB is removed. Once removed, the MBB must immediately be secured in a secure, serialized tamper-evident container, or a secure container that is sealed with a serialized, tamper-evident seal. Further, the compartment that contained the MBB must be re-sealed with a serialized, tamper-evident seal. The polling place supplies that are returned should include a record of the serial numbers of the seals used to secure the MBB compartment on the equipment, as well as the precinct supplies returned. Finally, the equipment must be locked in a secure location that has received prior approval by the election official or deputy, and that will prevent unauthorized access to the equipment.

Electronic components of a voting system not transported back to the jurisdiction headquarters on election night must be secured in one or more uniquely serialized, tamper-evident container(s) and placed in secured storage. The use procedures must impose the same requirements for signed logging of the inspection of security containers and the removal and return of voting system components to security containers that apply to security seals and locks on the voting system components themselves.

Approved secure tamper-evident containers include:

- A uniquely serialized, sealed banker's bag
- A zippered nylon or canvass bag or case on which the zipper(s) that prevent access to the voting system component(s) inside are kept closed by a uniquely serialized, tamper-evident lock; or
- A hard lid that blocks access to all doors, ports or other points of access to the inside of the voting system component(s) and that is held in place by a latch or latches closed with a uniquely serialized, tamper-evident lock or locks.

10.1.4 Equipment Storage Between Elections

Between elections, all voting equipment must be kept in a secure facility where access to the equipment is limited to authorized persons and unauthorized access to the equipment is readily detectable. A tracking mechanism must be used that will allow a jurisdiction to document all personnel who have entered and exited the storage facility.

10.2 Logical Security of System and Components

Hart Voting System software applications are installed only by personnel authorized by Hart InterCivic.

10.2.1 Essential and Non-Essential Services and Ports

The Serial Ports on HVS PCs in California are not used for any purpose by Hart proprietary software. Consequently, these ports should be disabled in the BIOS when the PC is configured for use with any HVS application. Otherwise, all other types of ports may be used with the HVS. However, as a good security practice, any excess ports on an HVS PC not being used by the application should be physically blocked using a mechanical port lock or tamper-evident seal.

10.2.1.1 Windows 2000 Non-Essential Services Security

All non-essential services must be disabled on the jurisdiction's Election Management System PCs at installation and must remain disabled. Systems with modems that were deployed prior to publication of these procedures must have the modem disabled or removed. See the *Tally Computer Setup Procedures for California Users* document for detailed instructions on configuring Windows 2000 Services on HVS application computers.

10.2.1.2 Local Security Policy Component Values

The list of security policy components with the proper value to be set is listed in the *Tally Computer Setup Procedures for California Users* document.

10.2.1.3 Security Port Protection on HVS Voting Equipment

The following table indicates the proper security protection of ports on HVS voting devices.

Device and Port	Status	Proper Security Protection
Judge's Booth Controller (JBC)		
▪ Printer Port	Essential	Keep blocked with cover or tamper-evident seal when not in use.
▪ Modem Port	Non-essential	Not used in California. Keep blocked with cover or tamper-evident tape.
▪ Booth Out	Essential	Keep blocked with cover or tamper-evident seal when not in use.
▪ MBB Slot	Essential	Keep blocked with cover or tamper-evident seal when not in use.
eSlate		
▪ Cable In	Essential	Keep blocked with cover or tamper-evident seal when not in use.
▪ Last Booth Out Cable	Non-essential	Remove or keep blocked with cover or tamper-evident seal when not in use.
eScan		
▪ USB Port	Non-essential	Not used. Keep blocked with cover, internal blocking device or tamper-evident tape at all times.
▪ Data Port (RJ-45)	Essential	Keep blocked with cover or tamper-evident seal when not in use.
▪ MBB Slot	Essential	Keep blocked with sealed cover or tamper-evident seal when not in use.
eSlate Booth		
▪ Cable In	Essential	Keep blocked with cover or tamper-evident seal when not in use.

10.2.2 User Level Security

When creating usernames and passwords for each software application, all users must have only the minimum required permissions for their role. Jurisdictions will maintain a record of all personnel authorized access to PCs containing HVS applications and/or data. This record will include the operational responsibilities of each person with respect to the specific application and the permissions granted to that person to accomplish those responsibilities. The record will normally be maintained and controlled by the jurisdiction’s chief election official, who will ensure the document is stored in a secure location.

10.2.2.1 BOSS Permissions

BOSS Users may be configured with “Update,” “View” or “All” permissions. For additional details on functions associated with various BOSS permission levels, see the *Hart InterCivic Ballot Origination Software System Operations Manual* 6100-019 Rev. 43-62B and *Ballot Origination Software System Training Manual* 6300-002 62A.

10.2.2.2 Ballot Now Permissions

Ballot Now Users may be configured with “Resolution Board,” “Operator,” or “Administrator” permissions. For additional details on functions associated with various Ballot Now permission

levels, See the *Hart InterCivic Ballot Now Operations Manual* 6100-067 Rev. 33-62B and *Ballot Now Training Manual* 6300-003 62A.

10.2.2.3 Tally Permissions

Tally Users may be configured with “Operator” or “Administrator” permissions. For additional details on functions associated with various Tally permission levels, see the *Hart InterCivic Tally Operations Manual* 6100-049 Rev. 43-62C and *Tally Training Manual* 6300-005 62A.

10.2.2.4 Rally Permissions

Rally Operators are typically configured with “MBB processing and transferring” permissions. Rally Administrators are typically configured with all permissions. For additional details on functions associated with various Rally permission levels, see the *Hart InterCivic Rally Operations Manual* 6100-114 Rev. 23-62A and *Tally Training Manual* 6300-005 62A.

10.2.2.5 SERVO Permissions

SERVO users may be granted any combination of the following permissions: “User Administration”; “Event Administration”; “Equipment Administration”; “Admin Reset”; “Election Recount/Recovery”; and “Reporting.” For additional details on functions associated with various SERVO permission levels, see the *Hart InterCivic SERVO Operations Manual* 6100-102 Rev. 42-62B and *Hart Voting System Support Procedures Training Manual* 6300-006 62D.

10.2.3 Anti-Virus Protection

Installation of anti-virus software on PCs used to run HVS applications is prohibited unless specifically approved by Hart InterCivic and the office of the California Secretary of State.

Once an approved anti-virus application is installed on a PC running HVS applications, the user jurisdiction is responsible for obtaining and installing updates on a regular basis in accordance with procedures to be approved by Hart InterCivic and the office of the California Secretary of State.

As a minimum, virus signature files will be updated prior to an application being utilized to initiate work on a new election.

All anti-virus updates must be accomplished from write-once media. Computers running HVS applications may not be connected to internal or external networks or to the Internet or to any computer connected to the Internet to update anti-virus software and signatures.

10.2.4 Procedures for Verifying, Checking, and Installing Essential Updates and Changes

Jurisdictions are prohibited from installing any software applications or utilities on any component of the voting system that have not been identified and approved by Hart and approved/certified by the Secretary of State.

Installation of software and firmware upgrades may be performed only by personnel trained and authorized by Hart InterCivic.

- Hart maintains a server dedicated to querying our software vendors regularly for new software updates or releases. Information gathered is then reviewed and internal users are notified of new update availability.
- Hart will review all updates to Windows 2000 and identify those that may have an impact on the security of HVS operations.
- Those updates considered candidates for implementation and distribution to HVS users will be tested and approved or disapproved for use.
- Approved updates will be placed on appropriate media for implementation and submitted to California Secretary of State for approval.

- When approved by the State for distribution, Hart will notify all customers and provide appropriate instructions for obtaining installation media and accomplishing the update.

10.2.4.1 Installation Procedures for Updates

Standardized procedures are used for installing updates to Election Management System software, eSlate or eScan System devices.

Installations will only be performed from trusted build software obtained directly from the approved federal testing laboratory or the California Secretary of State.

User jurisdictions will provide Hart and the California Secretary of State documentation of recipients and custodians authorized by the jurisdiction to receive and maintain custody of this confidential and proprietary software.

When update installations are required, Hart will coordinate with the individual user jurisdictions to agree on timing of the upgrade and requirements for upgrade operations support by Hart and the user.

When the update is complete, customers will accomplish the reporting and documentation actions specified by Hart.

10.2.4.2 Acceptance Testing After the Installation

Hart InterCivic requires the jurisdiction to formally accept upgrades made to the Election Management System applications, eSlate System, or eScan System devices.

For upgrades to Hart Voting System software/firmware, Hart InterCivic personnel will provide a log of software to be upgraded along with a description of changes in the upgraded software certified by the Secretary of State. The versions of upgrade software will be verified by viewing the application version number in the application's About window accessed from the Help menu and by using the automated procedure described in Section 3.6 Automated Configuration Verification.

When required by the jurisdiction, HVS equipment acceptance testing will be performed as described in Section 3.4 Acceptance Testing.

Formal acceptance of the application software upgrades will be documented by dated signatures by jurisdiction and Hart representatives on the upgrade document.

10.2.4.3 Audit Records for the Changes

Hart InterCivic supplies a log to the jurisdiction and keeps its own record of what software or firmware has been upgraded, when it was upgraded, who performed the upgrade, and why the upgrade was performed. These logs must be retained for the life of the Hart Voting System.

10.2.5 Equipment Repair

Equipment repair is initiated by a call to Hart Customer Service Center (CSC), which triggers the following actions:

- An equipment repair request ticket is opened in TeamTrack (TT) listing all devices in need of repair by serial number and device type on a new Chain of Custody document. Any requests by the customer for shipping cartons should be included in the TT repair request.
- CSC issues a Return Material Authorization (RMA) number to all devices reported as needing repair.
- An electronic copy of the Chain of Custody document is generated for each device listing the TT repair ticket number, device type, serial number, reason for repair and uploaded to the TT ticket and emailed to the customer with RMA instructions and shipping details.

- The customer updates the Chain of Custody document with the serial number of any seal(s) affixed to the device, places the device in the shipping container with a signed copy of the Chain of Custody document and includes the serial number of the seal that will be used to seal the shipping container.
- The serialized tamper-evident seal must be affixed to seal the outside of the shipping carton to allow for proper inspection prior to opening the container.
- The customer ships the device(s) via FedEx, UPS or other contract carrier (from whom a unique tracking number must be obtained). The electronic Chain of Custody document with the shipper tracking number is uploaded to the TT repair ticket thereby giving notice of the pending shipment.
- Upon receipt of the device(s), a Hart repair technician will inspect the shipping carton to verify the integrity of the seal affixed prior to shipping remains in tact. The serial number of this seal is compared to the number logged on both the electronic copy of the Chain of Custody document on the TT repair ticket and the printed copy shipped with the equipment.
- If Hart breaks any unit seal during the repair process, the Chain of Custody log will be updated and the seal will not be replaced.
- After the unit is repaired and tested, it will be placed back in the original shipping carton.
- The original carton will be resealed and the serial number of the seal logged on the Chain of Custody document, along with the shipment tracking number, a copy of which is both inside the shipping carton in printed copy and provided electronically in TeamTrack.
- An analysis of the repair will also be provided with the returned device and electronically in TeamTrack.
- The jurisdiction must perform an acceptance test on the returned repaired unit(s), as described in Section 3.4 Acceptance Testing.

Immediately after any repair or modification of any voting system component that requires opening the housing, the integrity of the firmware and/or software must be verified using the automated mechanisms described in Section 3.6 above, or all software must be reinstalled from a read-only version of the approved firmware and/or software supplied directly by the approved federal testing laboratory or Secretary of State before the equipment can be put back into service.

10.2.6 Cryptography and Digital Signatures

An eCM (eSlate Cryptographic Module), a physical Spyrus USB security key provided by Hart InterCivic, is required for access to secure functions in the BOSS, Tally, Rally, Ballot Now, and SERVO applications on the jurisdiction's Election Management System PCs. Integrated internal software for communication with the eCM is installed automatically when an HVS application is installed.

A new security signing key must be created for every new election. The security signing key is generated by the eCM Manager application, and a PIN is user-defined by a jurisdiction administrator. The security signing key and associated PIN are then written to an eCM using the eCM Manager application.

All eCMs should be closely managed.

- The number of eCMs being used for an election and their PIN(s) should be logged in a secure location.
- eCMs should be labeled with the election name or similar information, but NOT with the eCM Key ID or PIN.
- eCMs should be stored in a secure location, separate from election MBBs.

In a given election, the security signing key is required by the BOSS application for user acceptance of the ballot formats, and BOSS then writes the security signing key to every MBB. A matching security signing key must be present on the eCM(s) used with Ballot Now, Tally, Rally, and SERVO for these applications to successfully interact with other HVS components used for the specific election. The operator is required to enter the PIN when the eCM is accessed by any HVS component.

The SERVO application is used to program JBCs and eScans with the election's security signing key before these devices are capable of authenticating MBBs for the specific election.

10.3 Security Procedures for Central Processing

MBB processing and Election Night procedures for Central Processing are described in detail in the *Hart Voting System Support Procedures Training Manual 6300-006 62C*.

MBBs, eSlates, JBCs, eScans, paper ballots, and their associated logs from the polling places are delivered to Central Processing as described in Section 5.8, Securing Audit Logs and Backup Records, and in Section 10.1.3, Voting Devices Used In the Polling Place, above. Only Jurisdiction personnel may have custody of any devices, paper ballots, VBO paper rolls, and documentation from the polling places and Rally stations. Poll workers are not permitted to have access to any VBO audit records, nor may they participate in any audits or recounts involving VBO audit records.

Upon return to the jurisdiction, all equipment is to remain in the custody of at least two persons until secured against undetected tampering.

Public access to Central Processing procedures shall be limited to viewing only. The public, including official observers, shall not be permitted physical access to ballots, MBBs, polling place records, voting equipment or any computer or closed direct connection network running components of this voting system.

A number of jurisdiction personnel are engaged to remove the MBBs from the JBCs and eScans so they can be read into Tally. To remove the MBB from a JBC or eScan, the integrity of the tamper-evident seals is verified before the security seal is removed, and then the MBB is removed. Different jurisdiction personnel are engaged to review the reconciliation logs and Tally Reports from the JBCs and eScans from each polling place. Each group of jurisdiction personnel is responsible for ensuring the security of the devices and documents they manage during these procedures.

Additional jurisdiction personnel retrieve the VBO units from the booths by verifying the integrity of each VBO unit security seal, removing the security seal, and taking the VBO unit out of the booth. The verified printout rolls from the VBOs are then removed by verifying the integrity of each paper roll security seal, removing the security seal, opening the VBO unit and removing the printout roll from the VBO unit.

10.4 Security Procedures for Polling Place

Refer to Section 10.1.3.2 above for procedures and requirements for transport of voting equipment and supplies to the polling place, as well as back to the jurisdiction for tabulation.

During polling place setup and prior to the opening of the polls, the integrity of all security seals designated by the jurisdiction shall be inspected, verified, logged and countersigned by at least two poll workers at each precinct.

Throughout the day on Election Day, security seals should be inspected and verified on a regular basis, with inspections being conducted without disrupting voting operations.

All voting equipment shall be positioned such that it can be continuously observed by the poll workers.

No poll worker or other person may record the time at which or the order in which voters vote in a polling place.

Polling place records shall remain in the custody of poll workers and shall not ever be accessible to the public.

At no time shall voting equipment, ballots, the ballot box, and/or polling place records be in the sole custody of any one person.

The poll workers are required to immediately notify the jurisdiction's chief election official if it is discovered there is a breach of any seal or any other violation of the security procedures in this section. See Section 10.6 below.

A warning must be posted in each voting booth stating that, pursuant to Elections Code §18564 through §18569, tampering with voting equipment or altering vote results constitutes a felony, punishable by imprisonment.

10.5 Poll Worker Training

Training of poll workers must include the following:

- Secure storage of voting equipment while in the poll worker's possession
- Chain-of-custody procedures required for voting equipment and polling place supplies
- Seal placement and procedures for verification of seal integrity
- Placement and observation of voting equipment
- Observation of activity that could indicate tampering or an attempt at tampering
- The Voter Bill of Rights set forth in Section 2300 of the Elections Code
- The purpose served by the Voter Verified Paper Audit Trail (VVPAT), the importance of its use by voters, and how to handle problems such as VVPAT replacement after a paper jam
- A voter's right to vote on a paper ballot (in all DRE polling places) and how to handle requests for paper ballots
- How to ensure, when required, that a minimum of five voters vote on each DRE in a polling place
- The public right to inspect voting equipment and security seals, and how to handle requests for such inspections
- How to handle equipment failure or lack of sufficient paper ballots in a polling place and how to ensure continuity of the election in the event of such a failure
- How to properly log all events and issues related to voting equipment in the polling place, including voter complaints of malfunctioning equipment

10.6 Compromised Chain of Custody or Security Seals

With respect to any piece of voting equipment for which the integrity of any seal has been breached or there is any indication that the chain of custody has been compromised, the following actions must be taken:

- The chief elections official of the jurisdiction must be notified immediately.
- The equipment must be removed from service immediately and replaced if possible.
- Any votes cast on the device prior to its removal from service must be subject to a 100% manual tally, by the process described in Elections Code §15360, as part of the official canvass. Notice to the public of this manual tally may be combined with the notice required by any other manual tally required in this order or by Elections Code §15360.
- Any memory card containing data from that device must be secured and retained for the full election retention period.
- A backup of all device Cast Vote Records and system audit logs will be recorded to write-once media and retained securely for the full election retention period.
- All device software and firmware must be reinstalled from a read-only version of the approved firmware and software supplied directly by the approved federal testing laboratory or the Secretary of State before the equipment is placed back into service.

10.7 Audit Trails

All components of the Hart Voting System create an audit record anytime they are accessed or information is changed. Audit records can be extracted and printed in hard copy or exported to PDF file for an electronic copy. Audit reports exported to PDF file can be archived electronically to CD-ROM/DVD-R.

Note: As directed by the California Secretary of State, each jurisdiction shall, (1) before taking any action that could delete or overwrite any audit log, create an electronic copy, when applicable, or a clean paper copy, of all audit logs, to be maintained for the timeframe mandated by law; and (2) the jurisdiction's elections official or designee shall submit promptly to the Secretary of State a signed statement attesting that requirement (1) has been met.

- The BOSS, Tally, Rally, Ballot Now, and SERVO applications create audit logs of actions performed. Tally and Rally audit logs can also be printed in real-time to a line printer or to a file. The audit log reports for the software applications and methods for exporting audit logs in a variety of formats suitable for use by the public (e.g., text, Excel, PDF) are described in their respective Hart InterCivic Operations Manuals:
 - *Ballot Origination Software System Operations Manual 6100-019 Rev. 43-62B*
 - *Ballot Now Operations Manual 6100-067 Rev. 33-62B*
 - *Tally Operations Manual 6100-049 Rev. 43-62C*
 - *Rally Operations Manual 6100-114 Rev. 23-62A*
 - *SERVO Operations Manual 6100-102 Rev. 42-62B*
- The JBC, eSlate, and eScan devices create audit logs that are stored in the device. These audit logs are readable and can be printed to PDF files through the Device Audit Log reports in SERVO for archiving as part of the Election record.

10.7.1 Checklist of Audit Trail Reports

NOTE: Audit codes are described in the respective Operations Manuals referenced in the section above. Additional confidential information on audit codes for the JBC, eSlate and VBO is published in the document *6000-011 Rev H Precinct Audit Log Specifications* and will be made available upon request by a customer needing to address a specific issue.

- BOSS
 - Audit Trail Report – Generated from the Audit Trail command in the Reports menu.
- Ballot Now
 - Election Database Audit Log – Generated from the Audit Log – Election command in the Reports menu.
 - Security Database Audit Log – Generated from the Audit Log – Security command in the Reports menu.
- Tally
 - Audit Log – Generated from the Audit Log item in the Reporting tab.
- Rally
 - Rally – Internal Audit Report – Generated by clicking the Application Log quick link in the sidebar or by selecting the Reports command in the File menu to open the Report Selection window, then selecting Internal Audit Report.
 - Caution: Resetting the Rally database resets the audit log. Ensure all database, report and audit log information is backed up prior to **each** reset action.
- SERVO
 - Device Audit Log – Generated from the Device Audit command in the Reports menu.
 - SERVO Internal Audit Report – Generated from the SERVO Audit command in the Reports menu.

11 Biennial Hardware Certification and Notification

California Election Code §19220 requires jurisdictions to examine voting systems every two years and certify the results to the Secretary of State.

By order of the Secretary of State, voting systems certified for use in California shall comply with all applicable state and federal requirements, including, but not limited to, those voting system requirements as set forth in the California Elections Code and the Help America Vote Act of 2002 and those requirements incorporated by reference in the Help America Vote Act of 2002. Further, voting systems shall also comply with all state and federal voting system guidelines, standards, regulations and requirements that derive authority from or are promulgated pursuant to and in furtherance of the California Elections Code and the Help America Vote Act of 2002 or other applicable state or federal law when appropriate.

Where circumstances require it, the Secretary of State may adjust or amend any of the conditions of recertification for a vendor or a jurisdiction, as the Secretary of State deems prudent and necessary to facilitate successful election administration. Such adjustments or suspensions shall be deemed to be incorporated herein as if set forth in full.

11.1 eSlate System Test Procedure

The eSlate System test procedure for voting system examination is a combination of portions of the eSlate System acceptance and functionality test procedures and the eSlate System logic and accuracy test procedure described in *Hart Voting System Support Procedures Training Manual 6300-006 62C*.

11.1.1 eSlate System Equipment Test

In brief, the steps for examination of JBCs, eSlates, and VBOs are as follows: Caution: Do not perform this test until after the CVRs and audit logs from the previous election have been backed up to Events in the SERVO database.

- Use SERVO and an eCM token to write an Election security signing key to the JBCs and to clear the CVRs and audit logs from the JBCs and eSlates.
- Set up an election in BOSS and write Test MBBs and Audio cards.
- Install batteries in the JBCs, eSlates, and VBOs.
- Install paper in the JBCs and VBOs.
- Install a Test MBB in each JBC.
- Set up each JBC and connect to up to 12 eSlates with VBO units installed. One eSlate should be a DAU eSlate equipped with an Audio card, headphones, and tactile input switches.
- Connect the VBO to power.
- Connect the JBC to power.
- Log the success/failure of each of the following conditions:
 - Verify that the JBC and the connected eSlates/VBOs power up and that the JBC printer and the VBO printer print the initialization/power-on reports.
 - Verify that the AC and Battery power messages on the JBC screen indicate, "OKAY".
 - Verify that the power supply messages on the eSlate screens indicate "OKAY".
- Enter the start-up password and open the polls.

11.1.2 eSlate System Logic and Accuracy Test

In brief, the steps for examination of the logic and accuracy of the eSlate System are as follows:

- Print a test deck of ballots from Ballot Now.

- Vote test deck paper ballots.
- Cast matching votes on the eSlates and monitor the accuracy of the ballot summary page printout on the VBO.
- Scan test deck paper ballots in Ballot Now and/or eScan.
- Tabulate MBBs from eScans and JBCs in Tally and verify results.
- Document the logic and accuracy tests.

11.2 eScan System Test Procedure

The Scan System test procedure for voting system examination is a combination of portions of the eScan System acceptance and functionality test procedure and the eScan System logic and accuracy test procedure described in *Hart Voting System Support Procedures Training Manual 6300-006 62C*.

11.2.1 eScan System Equipment Test

In brief, the steps for examination of eScans are as follows: Caution: Do not perform this test until after the CVRs and audit logs from the previous election have been backed up to Events in the SERVO database.

- Use SERVO and an eCM to write an Election security signing key to the eScans and to clear the CVRs and audit logs from the eScans.
- Set up an election in BOSS and write Test MBBs and Audio cards.
- Install printer paper in the eScans.
- Install a Test MBB in each eScan.
- Connect the eScan to power and turn it on.
- Log the success/failure of each of the following conditions:
 - Verify that the eScan powers up and the screen displays the power-up messages.
 - Verify that the eScan printer prints the initialization report.
- Enter the start-up password and open the polls.
- Inspect the eScan ballot box and test locking it with the key.
- Inspect the eScan emergency ballot tray inside the ballot box.

11.2.2 eScan System Logic and Accuracy Test

In brief, the steps for examination of the logic and accuracy of the eScan System are as follows:

- Print a test deck of ballots from Ballot Now.
- Vote test deck paper ballots.
- Scan test deck paper ballots.
- Log the success/failure of each of the following conditions:
 - Verify that a blank ballot from the election scans.
 - Verify that a marked ballot from the election scans.
 - Verify that an undervoted ballot from the election scans.
 - Verify that an overvoted ballot from the election scans.
- Tabulate MBBs in Tally and verify the vote results.
- Document the logic and accuracy tests.

11.3 Ballot Now Central Count System Test Procedure

The Ballot Now Central Count System test procedure for voting system examination is a combination of portions of the Ballot Now acceptance and functionality test procedure and the Ballot Now logic and accuracy test procedure described in *Elections Office Preparation - Sample Ballots and Logic and Accuracy Test* in the *Ballot Now Training Manual 6300-003 62A*.

11.3.1 Ballot Now Central Count System Equipment Test

In brief, the steps for examination of the BN Central Count System are as follows:

- Set up an election in BOSS and write Test MBBs.
- Ensure the ballot/report printer is powered up and properly attached to the BN PC.
- Install a Test MBB in Ballot Now.
- Open the election in Ballot Now in Test Mode.
- Print a test deck of ballots.
- Print an Election Report.
- Ensure the Ballot Now Central Count scanner is connected, powered up correctly, recognized by the Ballot Now PC, displays no warning or error messages and has a clear paper path.
- Scan an unmarked ballot and log the success/failure of each of the following conditions:
 - Verify that the scanner properly scans the blank test ballot.
 - Verify that the BN ballot/report printer can print a batch report.
 - Verify that the test ballot requires resolution and that all contests are presented for resolution as being undervoted.
- Delete the test batch.

11.3.2 Ballot Now Central Count System Logic and Accuracy Test

In brief, the steps for examination of the logic and accuracy of the Ballot Now Central Count System are as follows:

- Print an Election Report.
- Vote test deck paper ballots printed earlier for system equipment test.
- Scan test deck paper ballots.
- Resolve scanned ballots and log the success/failure of each of the following conditions:
 - Verify that a blank ballot from the election scans properly, all contests are presented for resolution as being undervoted and resolution of all contests is completed correctly.
 - Verify that a correctly marked ballot from the election scans and is not presented for resolution.
 - Verify that an undervoted ballot from the election scans properly, all contests are presented for resolution as being undervoted and resolution of all contests is completed correctly.
 - Verify that an overvoted ballot from the election scans properly, all contests are presented for resolution as being overvoted and resolution of all contests is completed correctly.
- Write cast vote records to the MBB.
- Tabulate MBB in Tally and verify the vote results.
- Print an Election Report and verify all data.
- Document the logic and accuracy tests.